

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 Q
 Edition : 24.07.92
 Replaces : 05.92
 Test oil : ISO-4113

Combination no. : 0 403 446 287

Injection pump
 Pump designation : PES6MW100/320RS1219
 EP type number : 0 413 406 209
 Governor
 Governor design. : RQV350...1100MW118
 Governor no. : 0 420 083 249

Customer-spec. information
 Customer : VME

Engine : TD 61 GB

1st version kW : 115.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 11.2...11.4

100 s: (11.0...11.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1200

travel mm : 9.00...9.40

2nd speed rpm : 1150

travel mm : 8.70...8.90

3rd speed rpm : 725

travel mm : 3.70...4.30

4th speed rpm : 350

travel mm : 1.20...1.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1000

Del.quantity : 112.0...114.0

1000 : (110.0...116.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 102...110

Testing:

1st rack travel in: 10.60

Speed rpm : 1140...1150	Aneroid pressure h: 1000
2nd rack travel in: 4.00	Speed rpm : 700
Speed rpm : 1200...1230	Del.quantity cm ³ / : 122.5...125.5
4th rack travel in: 1300	1000 s: (120.0...128.0)
Speed rpm : 0.10...1.00	Spread cm ³ : 3.50
	1000 s: (7.0)
LOW IDLE 1	Aneroid pressure h: -
Control lever	Speed rpm : 700
position degrees: 68...76	Del.quantity cm ³ / : 77.0...79.0
Setting point w/out bumper spring	1000 s: (75.0...81.0)
Speed rpm : 350	
Rack travel in mm : 5.6	
Testing:	RACK STOP ADJUSTMENT
Speed rpm : 200	Speed rpm : 100
Minimum rack trave: 8.00	BREAKAWAY
Speed rpm : 350	1st version
Rack travel in mm : 5.50...5.70	1mm rack travel less than
Rack travel in mm : 2.00	full load rack tr: 10.60
Speed rpm : 460...520	Speed rpm : 1140...1150
TORQUE CONTROL	STARTING FUEL DELIVERY
Torque control curve - 1st version	Speed rpm : 100
1st speed rpm : 1100	Del.quantity cm ³ / : 120.0...140.0
Rack travel in m: 11.60...11.70	1000 s: (117.0...143.0)
2nd speed rpm : 700	Rack travel in mm : 19.00...21.00
Rack travel in m: 12.40...12.60	LOW IDLE
3rd speed rpm : 1025	Speed rpm : 350
Rack travel in m: 11.80...12.10	Rack travel in mm : 5.50...5.70
4th speed rpm : 900	Del.quantity cm ³ / : 16.0...20.0
Rack travel in m: 12.20...12.50	1000 s: (13.5...22.5)
Aneroid/Altitude Compensator Test	Spread cm ³ : 3.50
1st version	1000 s: (5.00)
Setting	Remarks:
Speed rpm : 700	:
Pressure hPa : 670	
Rack travel mm : 12.10...12.20	
Measurement	
Speed 1/min : 700	
1st pressure hPa : -	
Rack travel in m: 9.80...9.90	
2nd pressure hPa : 250	
Rack travel in m: 10.10...10.40	
3rd pressure hPa : 1000	
Rack travel in m: 12.40...12.60	
START CUT-OUT	
Speed 1/min : 270 (290)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
A02	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC
 Edition : 31.07.92
 Replaces : 07.92
 Test oil : ISO-4113

Combination no. : 0 403 446 308

Injection pump
 Pump designation : PES6MW100/320RS1198
 EP type number : 0 413 406 188
 Governor
 Governor design. : RQV350...1200MW46-47
 Governer no. : 0 420 083 277

Customer-spec. information
 Customer : NAVISTAR

Engine : DTA-466

1st version kW : 156.5
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35
 : (3.20...3.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.50...11.60

Del.quantity cm³/ : 12.2...12.4

100 s: (12.0...12.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 1450
travel mm		: 9.80...10.20
2nd speed	rpm	: 1250
travel mm		: 7.90...8.10
3rd speed	rpm	: 550
travel mm		: 3.10...3.70
4th speed	rpm	: 350
travel mm		: 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version		
Speed	rpm	: 800
Aneroid pressure h:		: 1200
Del.quantity		: 122.0...124.0
1000		: (120.0...126.0)
Spread	cm ³	: 3.50
1000		: (6.00)

RATED SPEED

1st version

Control lever
position degrees: 102...110

Testing:

1st rack travel in: 10.50
Speed rpm : 1290...1310
2nd rack travel in: 4.00
Speed rpm : 1405...1415
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 350
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...8.80
2nd pressure hPa : 245
Rack travel in m: 9.80...9.90
3rd pressure hPa : 395
Rack travel in m: 10.90...11.30

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1200
Del.quantity cm3/ : 118.5...122.5
1000 s: (116.5...124.5)

Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 68.0...71.0
1000 s: (66.0...73.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.50
Speed rpm : 1290...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...170.0
1000 s: (125.0...175.0)
Rack travel in mm : 12.50...13.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: IHC #1819888C91
Only perform pump setting with original
overflow valve without IH hose and
restrictor 1.2 mm diameter.

In unlatched condition, do not
operate greater than n = 500 1/min

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 446 313

Injection pump
 Pump designation : PES6MW100/720RS1228
 EP type number : 0 413 406 218
 Governor
 Governor design. : RQV325...1350MW127K
 Governor no. : 0 420 083 988

Customer-spec. information

Customer : IVECO-FIAT

Engine : 8060.45.6200

1st version kW : 167.0
 Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.20...12.30

Del.quantity cm³/

100 s: (11.3...11.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 6.5...6.7

Del.quantity cm³/

100 s: (1.7...2.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 1400
	travel mm	: 10.00...10.40
2nd speed	rpm	: 825
	travel mm	: 4.90...5.10
3rd speed	rpm	: 400
	travel mm	: 2.90...3.50
4th speed	rpm	: 325
	travel mm	: 1.50...1.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 700
Aneroid pressure h:		1200
Del.quantity		: 115.5...117.5
	1000	: (113.5...119.5)
Spread	cm ³	: 3.50
	1000	: (6.00)

RATED SPEED

1st version	
Control lever	
position degrees:	120...128

Testing:
1st rack travel in: 12.10
Speed rpm : 1420...1430
2nd rack travel in: 4.00
Speed rpm : 1515...1545
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 78...86
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:
Speed rpm : 200
Minimum rack trave: 10.00
Speed rpm : 325
Rack travel in mm : 6.50...6.70

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 12.20...12.30
2nd speed rpm : 1200
Rack travel in m: 13.40...13.60
3rd speed rpm : 900
Rack travel in m: 12.60...12.80
4th speed rpm : 1350
Rack travel in m: 13.10...13.30

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 1200
Pressure hPa : -
Rack travel mm : 8.90...9.10

Measurement
Speed 1/min : 1200

1st pressure hPa : 450
Rack travel in m: 11.50...11.60
2nd pressure hPa : 800
Rack travel in m: 12.50...12.80
3rd pressure hPa : 1200
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1200

Del.quantity cm³/ : 120.0...123.0
1000 s: (117.5...125.5)
Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 71.0...73.0
1000 s: (69.0...75.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1420...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 40.0...60.0
1000 s: (37.0...63.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm³/ : 20.0...24.0
1000 s: (17.5...26.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 466 129

Injection pump
 Pump designation : PES6MW100/120RS1137-
 2
 EP type number : 0 413 406 180
 Governor
 Governor design. : RSV550...1100MW2A319
 -18
 Governor no. : 0 420 085 205

Customer-spec. information
 Customer : CUMMINS

Engine : 6 CTA

1st version kW : 179.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

A07

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 13.0...13.2

100 s: (12.8...13.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 550.0
 Rack travel in mm : 6.2...6.4
 Del.quantity cm³/ : 1.8...2.2
 100 s: (1.6...2.5)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 2.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 130.5...132.5
 1000 : (128.5...134.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 84...92

Setting point:
Speed rpm : 800
Rack travel in mm : 0.6

cylinder 1
Adjust stop lever to 0.5...1.0 mm before stop.

Testing:
1st rack travel in: 11.90
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever position degrees: 65...73
Setting point w/out bumper spring
Speed rpm : 550
Rack travel in mm : 5.8

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 550
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 520...580

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (127.0...153.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 550
Rack travel in mm : 6.20...6.40
Del.quantity cm³/ : 18.5...22.5
1000 s: (16.0...25.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:
: CUM #3923540

Start-of-delivery mark at 10° cam rotation angle after start of delivery,

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 466 130

Injection pump
 Pump designation : PES6MW100/120RS1137-
 2

EP type number : 0 413 406 180

Governor

Governor design. : RSV550...1100MW2A335
 4

Governor no. : 0 420 085 206

Customer-spec. information

Customer : CUMMINS

Engine : 6 CTA

1st version kW : 179.0

Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Phasing
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 13.0...13.2

100 s: (12.8...13.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 550.0

Rack travel in mm : 6.2...6.4

Del.quantity cm³/ : 1.8...2.2

100 s: (1.6...2.5)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 2.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 130.5...132.5

1000 : (128.5...134.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 84...92

Setting point:
Speed rpm : 800
Rack travel in mm : 0.6

Testing:
1st rack travel in: 11.90
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 13.00
Speed rpm : 0.30...1.70

LOW IDLE 1
Control Lever
position degrees: 65...73
Setting point w/out bumper spring
Speed rpm : 550
Rack travel in mm : 5.8

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 550
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 520...580

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.90...13.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.30
2nd pressure hPa : 475
Rack travel in m: 12.40...12.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 120.0...122.0
1000 s: (118.0...124.0)

BREAKAWAY

1st version

A10

1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (127.0...153.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 550
Rack travel in mm : 6.20...6.40
Del.quantity cm³/ : 18.5...22.5
1000 s: (16.0...25.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:
: CUM #3923541

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIES5,681
 Edition : 24.07.92
 Replaces : 11.91
 Test oil : ISO-4113

Combination no. : 0 403 474 021

Injection pump
 Pump designation : PES4MW100/720RS1181
 EP type number : 0 413 404 107
 Governor
 Governor design. : RSV400...1000MW1A348
 Governer no. : 0 420 085 183

Customer-spec. information
 Customer : LIEBHERR

Engine : D914T

1st version kW : 100.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 049

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.70...10.90

Del.quantity cm³/ : 13.0...13.2

100 s: (12.8...13.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.0...6.5

Del.quantity cm³/ : 2.0...2.4

100 s: (1.7...2.6)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting X : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 130.0...132.0

1000 : (128.0...134.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 104...112

Setting point:

Speed rpm : 800

Rack travel in mm : 0.6

Testing:	
1st rack travel in: 9.70	Spread cm ³ : 3.50
Speed rpm : 1020...1030	1000 s: (7.0)
2nd rack travel in: 4.00	Aneroid pressure h: 1000
Speed rpm : 1060...1075	Speed rpm : 800
3rd rack travel in: 4.00	Del.quantity cm ³ / : 130.0...133.0
Speed rpm : 1070...1085	1000 s: (127.5...135.5)
4th rack travel in: 1200	Aneroid pressure h: -
Speed rpm : 0.30...1.70	Speed rpm : 500
	Del.quantity cm ³ / : 109.0...111.0
	1000 s: (107.0...113.0)
LOW IDLE 1	
Control Lever	BREAKAWAY
position degrees: 76...84	1st version
Setting point w/out bumper spring	1mm rack travel less than
Speed rpm : 400	full load rack tr: 9.70
Rack travel in mm : 5.7	Speed rpm : 1020...1030
Testing:	STARTING FUEL DELIVERY
Speed rpm : 100	Speed rpm : 100
Minimum rack trave: 19.00	Del.quantity cm ³ / : 130.0...140.0
Speed rpm : 400	1000 s: (127.0...143.0)
Rack travel in mm : 5.50...6.00	Rack travel in mm : 19.00...21.00
Rack travel in mm : 2.00	LOW IDLE
Speed rpm : 450...510	Speed rpm : 400
TORQUE CONTROL	Rack travel in mm : 6.00...6.50
Torque control curve - 1st version	Del.quantity cm ³ / : 20.0...24.0
1st speed rpm : 1000	1000 s: (17.5...26.5)
Rack travel in m: 10.70...10.90	Spread cm ³ : 3.50
2nd speed rpm : 500	1000 s: (5.00)
Rack travel in m: 10.70...10.90	
5th speed rpm : 450	
Rack travel in m: 11.90...12.10	
Aneroid/Altitude	Remarks:
Compensator Test	:
1st version	Check electrically unlatched starting
Setting	fuel delivery (EES) with 24 volt.
Speed rpm : 500	
Pressure hPa : -	
Rack travel mm : 10.20...10.40	
Measurement	
Speed 1/min : 500	
1st pressure hPa : 530	
Rack travel in m: 10.50...10.60	
2nd pressure hPa : 1000	
Rack travel in m: 10.70...10.90	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Aneroid pressure h: 1000	
Speed rpm : 500	
Del.quantity cm ³ / : 123.5...126.5	
1000 s: (121.0...129.0)	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 24.07.92
 Replaces : 02.92
 Test oil : ISO-4113

Combination no. : 0 403 476 116

Injection pump
 Pump designation : PES6MW100/720RS1131
 EP type number : 0 413 406 123
 Governor
 Governor design. : RSV350...1300MW0A329
 -14
 Governer no. : 0 420 085 192

Customer-spec. information
 Customer : MB-NFZ

Engine : OM 366 A

1st version kW : 125.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1-5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1280

Rack travel in mm : 10.50...10.60

Del.quantity cm³/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.0...5.5

Del.quantity cm³/ : 1.0...1.4

100 s: (0.7...1.6)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1280

Aneroid pressure h: 800

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 110...118

Setting point:

Speed rpm : 800

Rack travel in mm : 0.6

Testing:

1st rack travel in: 9.50

Speed rpm : 1330...1335 *

2nd rack travel in: 4.00

Speed rpm : 1410...1423
4th rack travel in: 1550
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.2

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 5.00...5.50
Rack travel in mm : 2.00
Speed rpm : 420...480

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1280
Rack travel in m: 10.50...10.60
2nd speed rpm : 800
Rack travel in m: 11.20...11.30
3rd speed rpm : 1100
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 9.20...9.30

Measurement
Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 9.70...9.90
2nd pressure hPa : 470
Rack travel in m: 10.50...10.70
3rd pressure hPa : 800
Rack travel in m: 11.20...11.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 800
Speed rpm : 800
Del.quantity cm3/ : 88.0...91.0
1000 s: (85.5...93.5)

Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 49.0...51.0
1000 s: (47.0...53.0)

BREAKAWAY
1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1330...1335

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.00...5.50
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:
Test hydr. locking device for starting with 800...1200 hPa air pressure.

* Read off speed set under 1.
Add 80...88 min-1 to this speed. The control-rod travel under 2. must be attained with the calculated speed profile.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC
 Edition : 24.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 476 121

Injection pump
 Pump designation : PES6MW100/320RS1198-
 1

EP type number : 0 413 406 211

Governor
 Governor design. : RSV350...1250MW2A347
 -1

Governer no. : 0 420 085 199

Customer-spec. information

Customer : NAVISTAR

Engine : DT-466

1st version kW : 172.0

Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35
 : (3.20...3.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Phasing :
 Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 13.2...13.4

100 s: (13.0...13.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.5...1.9

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 900

Del.quantity : 132.5...134.5

1000 : (130.5...136.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 100...108

Setting point:

Speed rpm : 800
Rack travel in mm : 0.6

Testing:

1st rack travel in: 11.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1345...1355
3rd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 4.90...5.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.10...12.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.20...9.30
2nd pressure hPa : 260
Rack travel in m: 10.20...10.30
3rd pressure hPa : 500
Rack travel in m: 11.40...11.80

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 80.5...84.5
1000 s: (78.5...86.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 15.5...19.5
1000 s: (13.0...22.0)
Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

: IHC #1819527091

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 03.92
 Test oil : ISO-4113

Combination no. : 9 400 087 429

Injection pump
 Pump designation : PES6P120A720RS3256-3
 EP type number : 9 400 087 079
 Governor
 Governor design. : RQV300...1500PA963
 Governer no. : 9 420 080 283

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 156.6
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del.quantity cm³/

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.80...1.30

2nd speed rpm : 660

travel mm : 3.80...4.30

3rd speed rpm : 960

travel mm : 5.20...5.70

4th speed rpm : 1357

travel mm : 8.00...8.50

5th speed rpm : 1492

travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1385

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 107...115

Testing:
1st rack travel in: 10.80
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 11.80...12.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 300
Rack travel in m: 10.10...10.30
3rd pressure hPa : 600
Rack travel in m: 11.30...11.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 157.0...159.0
1000 s: (154.0...162.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 141.0...145.0
1000 s: (138.0...148.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 03.92
 Test oil : ISO-4113

Combination no. : 9 400 087 430

Injection pump
 Pump designation : PES6P120A720RS3256-3
 EP type number : 9 400 087 079
 Governor
 Governor design. : RQV300...1300PA963-1
 Governor no. : 9 420 080 284

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 171.5
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 0.80...1.30
2nd speed	rpm	: 660
	travel mm	: 3.80...4.30
3rd speed	rpm	: 960
	travel mm	: 5.20...5.70
4th speed	rpm	: 1357
	travel mm	: 8.00...8.50
5th speed	rpm	: 1492
	travel mm	: 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1385

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version

Control lever
position degrees: 107...115

Testing:

1st rack travel in: 11.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1430...1460
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 73...81

Testing:

Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.60...12.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 300
Rack travel in m: 10.10...10.30
3rd pressure hPa : 700
Rack travel in m: 11.70...11.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 177.0...179.0
1000 s: (174.0...182.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 159.0...163.0
1000 s: (156.0...166.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113

Combination no. : 9 400 087 431

Injection pump
 Pump designation : PES6P120A720RS3256-2
 EP type number : 9 400 087 080
 Governor
 Governor design. : RQV300...1300PA963-2
 Governor no. : 9 420 080 285

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 141.7
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 0.60...1.30
2nd speed	rpm	: 660
	travel mm	: 3.80...4.30
3rd speed	rpm	: 960
	travel mm	: 5.20...5.70
4th speed	rpm	: 1357
	travel mm	: 8.00...8.50
5th speed	rpm	: 1492
	travel mm	: 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1385

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 9.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1415...1445
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 10.70...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 250
Rack travel in m: 9.90...10.10
3rd pressure hPa : 340
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 140.0...142.0
1000 s: (137.0...145.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 115.0...119.0
1000 s: (112.0...122.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113

Combination no. : 9 400 087 450

Injection pump
 Pump designation : PES6P120A720RS3256-2
 EP type number : 9 400 087 080
 Governor
 Governor design. : RQV300...1300FA978
 Governer no. : 9 420 080 296

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 126.8
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.80...1.30

2nd speed rpm : 660

travel mm : 3.80...4.30

3rd speed rpm : 960

travel mm : 5.20...5.70

4th speed rpm : 1357

travel mm : 8.00...8.50

5th speed rpm : 1492

travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1385

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version

Control lever
position degrees: 106...114

Testing:

1st rack travel in: 9.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1415...1445
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 73...81

Testing:

Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 10.70...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.80...10.10
2nd pressure hPa : 350
Rack travel in m: 10.10...10.30
3rd pressure hPa : 420
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 140.0...142.0
1000 s: (137.0...145.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: 1200

Speed rpm : 800
Del.quantity cm³/ : 115.0...119.0
1000 s: (112.0...122.0)
Spread cm³ : 8.00
1000 s: (12.0)

Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 63.0...65.0
1000 s: (60.0...68.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 10,1 e
 Edition : 24.07.92
 Replaces : 7.92
 Test oil : ISO-4113

Combination no. : 9 400 231 013

Injection pump
 Pump designation : PES6P110A720RS379
 EP type number : 9 410 231 001
 Governor
 Governor design. : RSV400...1050P0/4570
 R
 Governer no. : 9 420 234 015

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6619 T

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X3.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 13.5...13.7

100 s: (13.3...13.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm³/ : 2.1...2.7

100 s: (1.9...2.9)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 900

Del.quantity : 135.0...137.0

1000 : (133.0...139.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 9.20

Speed rpm : 1095...1105

3rd rack travel in: 6.20

Speed rpm : 1135...1165

4th rack travel in: 1200

Speed rpm : 0.30...1.70		
LOW IDLE 1	1st version	
Control lever	1mm rack travel less than	
position degrees: 23...31	full load rack tr: 9.20	
Setting point w/out bumper spring	Speed rpm : 1095...1105	
Speed rpm : 400	STARTING FUEL DELIVERY	
Rack travel in mm : 5.4		
Testing:		
Speed rpm : 100	Speed rpm : 100	
Minimum rack trave: 19.00	Del.quantity cm3/ : 190.0...210.0	
Speed rpm : 400	1000 s: (185.0...215.0)	
Rack travel in mm : 5.30...5.50	Rack travel in mm : 19.00...21.00	
Rack travel in mm : 2.00	HIGH IDLE	
Speed rpm : 520...530	1st version	
TORQUE CONTROL	Speed rpm : 1100	
Torque control curve - 1st version	Rack travel in mm : 6.10...6.30	
1st speed rpm : 1050	Del.quantity cm3/ : 45.0...55.0	
Rack travel in m: 10.20...10.30	1000 s: (42.0...48.0)	
2nd speed rpm : 630	LOW IDLE	
Rack travel in m: 10.80...11.00	Speed rpm : 400	
Aneroid/Altitude Compensator Test	Rack travel in mm : 5.80...6.00	
1st version	Del.quantity cm3/ : 21.0...27.0	
Setting	1000 s: (19.0...29.0)	
Speed rpm : 550	Spread cm3 : 4.50	
Pressure hPa : 900	1000 s: (7.50)	
Rack travel mm : 10.80...11.00	Remarks:	:
Measurement		
Speed 1/min : 550	Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.	
1st pressure hPa : -		
Rack travel in m: 9.60...9.80	Starting/full-load transition speed from holding magnet = 450 1/min.	
2nd pressure hPa : 373		
Rack travel in m: 10.50...10.60		
3rd pressure hPa : 247		
Rack travel in m: 9.90...10.30		
FUEL DELIVERY CHARACTERISTICS		
1st version		
Aneroid pressure h: 900		
Speed rpm : 630		
Del.quantity cm3/ : 145.0...149.0		
1000 s: (143.0...151.0)		
Aneroid pressure h: -		
Speed rpm : 550		
Del.quantity cm3/ : 113.5...121.5		
1000 s: (111.5...123.5)		
BREAKAWAY		

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ALO 13.8 h
 Edition : 11.8.92
 Replaces : 3.87
 Test oil : ISO-4113

Combination no. : 9 400 231 077

Injection pump
 Pump designation : PES6P120A320RS454
 Governor
 Governor design. : RSV600...1100P2/482R
 Governor no. : 9 420 234 015

Customer-spec. information
 Customer : ALLIS-CHALMERS

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve : 1 457 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 443 022

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.00x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.45...3.55
 : (3.40...3.60)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.20...11.40

Del.quantity cm³/ : 22.1...22.3

100 s: (22.1...22.3)

Spread cm³ : 0.8

100 s: (-)

2nd speed rpm : 600

Rack travel in mm : 5.1...5.3

Del.quantity cm³/ : 2.9...3.7

100 s: (-)

Spread cm³ : 0.7

100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 221.0...223.0

1000 : (221.0...223.0)

Spread cm³ : 8.00

1000 : (-)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 10.30

Speed rpm : 1145...1155

2nd rack travel in: 4.00

Speed rpm : 1210...1240

4th rack travel in: 1300

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 25...33

Setting point w/out bumper spring

Speed rpm : 600
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 600
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 655...7715

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del.quantity cm³/ : 217.0...223.0
1000 s: (214.0...227.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...170.0
1000 s: (-)
Rack travel in mm : 21.00

HIGH IDLE

1st version
Speed rpm : 1215
Del.quantity cm³/ : 43.0...53.0
1000 s: (-)

LOW IDLE

Speed rpm : 600
Del.quantity cm³/ : 29.0...37.0
1000 s: (-)

Remarks:

:

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 075 929

Injection pump
 Pump designation : PESSM55C320RS177
 EP type number : 0 410 055 974
 Governor
 Governor design. : RSF340/2300M64-18
 Governor no. : 0 420 021 159

Cust. part no. : T8

Customer-spec. information
 Customer : MB-PKW

Engine : OM602A-USA ALDA

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 1 688 901 111

Opening
 pressure, bar : 147...150

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

Rack travel in mm : 20.00...22.00
 Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 315.0

Rack travel in mm : 5.4...5.6

Del.quantity cm³/ : 0.6...0.7

100 s: (0.5...0.9)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.7...52.7

1000 : (50.7...53.7)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8,5...8,9

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1
 Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 315
Rack travel in mm : 5.5

Testing:

Speed rpm : 220
Minimum rack trave: 8.00
Speed rpm : 315
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.50
Speed rpm : 520...620
Speed rpm : 1000
Maximum rack trave: 1.80

SET IDLE AUXILIARY SPRING
Speed rpm : 380
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 1600
Rack travel in m: 13.00...13.20
3rd speed rpm : 2200
Rack travel in m: 12.20...12.40

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.30...0.70

Measurement
Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.40...3.60
2nd pressure hPa : 750
Rack travel in m: 4.90...5.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 48.5...50.5
1000 s: (47.5...51.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 54.0...0.0
1000 s: (54.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.50...8.90
Del.quantity cm³/ : 30.0...34.0
1000 s: (29.0...35.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 315
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 6.0...7.0
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed rpm : 340
Rack travel in mm : (12,7...14,1)
Del.quantity cm³/ : -
1000 s: (42,5...50,5)
Current A : 1,8

Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current
short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 54,0 1,8A

Remarks:

:
Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 16.8°...17.2°
(16.7...17.3°) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

Pin projection = 16.60...16.70 mm

Testing and adjusting the control-rod-travel sensor with evaluation circuit KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel
delivery at 21.5...22.5 (20.5...23.5)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 1.633 \dots 1.639$ (1.635...1.637) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.457...
2.517 V must be attained.

CORRECTION OF INJECTED-FUEL QUANTITY
-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Sliding sleeve pre-travel = 6.5 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 35.5°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
-Control-lever position 33.0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover

point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 075 930

Injection pump
 Pump designation : PE55M55C320RS177
 EP type number : 0 410 055 974
 Governor
 Governor design. : RSF340/2300M74-1
 Governor no. : 0 420 021 156

Cust. part no. : T8

Customer-spec. information
 Customer : MB-FKW

Engine : OM602A-D/A (KAT)

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 1 688 901 111

Opening
 pressure, bar : 147...150

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

Rack travel in mm : 20.00...22.00
 Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 345.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 0.6...0.7

100 s: (0.5...0.9)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.7...52.7

1000 : (50.7...53.7)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8,5...8,9

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER

POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1

Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 345
Rack travel in mm : 5.6

Testing:

Speed rpm : 150
Minimum rack trave: 10.0+1
Speed rpm : 345
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.50
Speed rpm : 550...650
Speed rpm : 1000
Maximum rack trave: 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 1600
Rack travel in m: 13.00...13.20
3rd speed rpm : 2200
Rack travel in m: 12.20...12.40

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.30...0.70

Measurement
Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.40...3.60
2nd pressure hPa : 750
Rack travel in m: 4.90...5.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 48.5...50.5
1000 s: (47.5...51.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 54.0...0.0
1000 s: (54.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.50...8.90
Del.quantity cm³/ : 30.0...34.0
1000 s: (29.0...35.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 345
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 6.0...7.0
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed rpm : 370
Rack travel in mm : (10,0...11,4)
Del.quantity cm³/ : -
1000 s: (29,0...37,0)
Current A : 1,8

Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 54,0 1,8A

Remarks:

:
ADJUSTMENT OF ACTIVE BUCKING DAMPING (ARD)
Control lever on full-load stop. At $n = 1000$ min
 $I = 2.5$ A, difference in delivery referenced to
delivery (5.6...7.6) ccm/1000 strokes.

SPRING CUTOFF

- Control-lever position 44,5° max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
- Control-lever position 42,0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 16.8°...17.2°
(16.7...17.3°) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

CORRECTION OF INJECTED-FUEL QUANTITY

-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Pin projection = 16.60...16.70 mm

Testing and adjusting the control-rod-
travel sensor with evaluation circuit

KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel
sensor

At a speed of 1000 1/min, set fuel
delivery at 21,5...22,5 (20,5...23,5)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 1.633...1.639$ (1.635...1.637) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.457...
2.517 V must be attained.

Sliding sleeve pre-travel = 4.7 mm

CHECKING THE IDLE-SPEED AUXILIARY

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 075 935

Injection pump
 Pump designation : PES5M55C320RS158-1
 EP type number : 0 410 055 979
 Governor
 Governor design. : RSF340/2300M65-4
 Governer no. : 0 420 021 144

Cust. part no. : T8

Customer-spec. information
 Customer : ME-FKW

Engine : OM602A-ECE ALDA

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 901 111

Opening
 pressure, bar : 144...150

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
 : (2.15...2.35)

Rack travel in mm : 20.00...22.00
 Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del.quantity cm³ : 5.2...5.3

100 s: (5.1...5.4)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 315.0

Rack. travel in mm : 5.3...5.5

Del.quantity cm³ : 0.6...0.7

100 s: (0.5...1.0)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 52.5...53.5

1000 : (51.5...54.5)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8,1...8,5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER

POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1

Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 315
Rack travel in mm : 5.4

Testing:

Speed rpm : 220
Minimum rack travel: 8.00
Speed rpm : 315
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.50
Speed rpm : 540...640
Speed rpm : 1000
Maximum rack travel: 1.80

SET IDLE AUXILIARY SPRINGS

Speed rpm : 380
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.90...14.00
2nd speed rpm : 1600
Rack travel in m: 13.10...13.30
3rd speed rpm : 2200
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.50...0.90

Measurement
Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.90...4.20
2nd pressure hPa : 750
Rack travel in m: 5.70...6.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 52.5...53.5
1000 s: (51.5...54.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 51.0...52.5
1000 s: (50.0...53.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 53.0...0.0
1000 s: (53.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.10...8.50
Del.quantity cm³/ : 29.0...33.0
1000 s: (28.0...34.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 315
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 6.5...7.5
1000 s: (5.5...10.0)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed rpm : 340
Rack travel in mm : (12,6...14,0
Del.quantity cm³/ : -
1000 s: (42,0...50,0)
Current A : 1,8

Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 53,0 1,8A

Remarks:

:
Sliding sleeve pre-travel = 6.5 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

- Control-lever position 35,5°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
- Control-lever position 33,0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

- Control lever at idle stop.
With $n = 315 \text{ 1/min.}$ and $p_u = 450 \text{ mbar}$,
control rod must move quickly to
control-rod travel = 0 mm

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 19.3°...19.7°
(19.2...19.8°) angular displacement of
cam following start of delivery of
cylinder no. 1.
Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : 14.10.91
 Test oil : ISO-4113
 Combination no. : 0 400 076 968

Injection pump
 Pump designation : PES6M55C320RS178
 EP type number : 0 410 056 986
 Governor
 Governor design. : RSF315/2125M64-13
 Governer no. : 0 420 021 128

Customer-spec. information
 Customer : MB-PKW

Engine : OM603A D35 USA ALDA

1st version kW : 100.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)
 Rack travel in mm : 20.00...22.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 5.8...5.9

100 s: (5.7...6.0)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 290.0

Rack travel in mm : 5.6...5.9

Del.quantity cm³/ : 0.5...0.6

100 s: (0.5...0.9)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 58.0...59.0

1000 : (57.0...60.0)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 6.5...6.9

Speed rpm : 2300

4th rack travel in: 2700

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1,4...1,5

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

Speed rpm : 290
Rack travel in mm : 5.7

Testing:

Speed rpm : 200
Minimum rack travel: 7.00
Speed rpm : 290
Rack travel in mm : 5.60...5.90
Speed rpm : 1000
Maximum rack travel: 1.50

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 3,60...3,70
: (3,50...3,80)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 1600
Rack travel in m: 12.70...12.90
3rd speed rpm : 2000
Rack travel in m: 11.30...11.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.40...0.80

Measurement
Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.50...3.70
2nd pressure hPa : 750
Rack travel in m: 5.00...5.40

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 54.5...56.0
1000 s: (53.5...57.0)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2000
Del.quantity cm³/ : 49.0...51.0
1000 s: (48.0...52.0)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050

Speed rpm : 1000
Del.quantity cm³/ : 38.0...39.0
1000 s: (37.0...40.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2300
Rack travel in mm : 6.50...6.90
Del.quantity cm³/ : 22.0...26.0
1000 s: (21.0...27.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 290
Rack travel in mm : 5.60...5.90
Del.quantity cm³/ : 5.5...6.5
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

Control lever at idle stop
Speed rpm : 315
Rack travel in mm : (11,7...13,1)
Del.quantity cm³/ : -
1000 s: (41,0...49,0)
Current A : 1,8

Control lever at full-load stop
Speed rpm : 2700
Rack travel in mm : 0,0...1,0
Current short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 52,0 1,8A

Remarks:
:

Start-of-delivery sensor system:

adjustment and blocking with device
KDEP 1077 = $16.8^\circ \dots 17.2^\circ$
 $(16.7 \dots 17.3^\circ)$ angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

CORRECTION OF INJECTED-FUEL QUANTITY

-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel
delivery at 22.0...23.0 (21.0...24.0)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 1.633 \dots 1.639$ ($1.635 \dots 1.637$) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.472...
2.532 V must be attained.

Testing and adjusting the control-rod- travel sensor with evaluation circuit

KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Sliding sleeve pre-travel = 5.5 mm

CHECKING THE IDLE-SPEED AUXILIARY

SPRING CUTOFF

-Control-lever position $44,5^\circ$ max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
-Control-lever position $42,0^\circ$,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

CHECKING THE PNEUMATIC SHUTOFF BOX

-Control lever up against idle stop.
At $n = 290$ 1/min and $p_u = 450$ mbar
control rod must move briskly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AA

Injection pump
 Pump designation : PE12A95D/10LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RGV75CAE996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F
 1st version kW : 184.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 10.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 773...788

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AB

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB99SL
 Governer no. : 0 420 212 091

Customer-spec. information

Customer : KHD

Engine : F12L413F

1st version kW : 176.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 25...29

Testing:

1st rack travel in: 10.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 773...788

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300

Rack travel in mm : 5.60...5.70

Del.quantity cm³/ : 4.0...9.0

1000 s: (1.5...11.5)

Spread cm³ : 3.00

1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AC

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information

Customer : KHD

Engine : F12L413F
 1st version kW : 162.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.30...10.40

Del.quantity cm³/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.30

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 094AD

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750A9996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 159.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.20...10.30

Del.quantity cm³ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AE

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F
 1st version kW : 154.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.90...10.00

Del.quantity cm³/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.90

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 094AF

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB995L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 148.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del.quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...135.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 101AA

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB10560
 Governer no. : 0 420 214 245

Customer-spec. information
 Customer : KHD

Engine : BF12L413FW
 1st version kW : 277.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.50...10.60

Del.quantity cm³/ : 9.4...9.6

100 s: (9.2...9.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 94.0...96.0

1000 : (92.0...98.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 9.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack trave: 3.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 310...380

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.50...10.60
2nd speed rpm : 775
Rack travel in m: 10.50...10.60
3rd speed rpm : 930
Rack travel in m: 10.70...10.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 10.50...10.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.30...10.40
2nd pressure hPa : 329
Rack travel in m: 10.60...10.70
3rd pressure hPa : 280
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 775
Del.quantity cm3/ : 98.5...101.5
1000 s: (96.0...104.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 77.0...79.0
1000 s: (75.0...81.0)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 9.40

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.40...14.60

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AA
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governer no. : 0 420 212 114
 Customer-spec. information
 Customer : KHD
 Engine : F12L413F
 1st version kW : 247.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance \pm - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed	rpm	: 0.00...1.00	Remarks:
-------	-----	---------------	----------

LOW IDLE 1
Control lever
position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AB

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information

Customer : KHD

Engine : F12L413F

1st version kW : 235.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.3...8.5

100 s: (8.1...8.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 83.0...85.0

1000 : (81.0...87.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.30

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed	rpm	: 0.00...1.00	Remarks:
-------	-----	---------------	----------

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Park travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 9.30...9.40

2nd speed rpm : 650

Rack travel in m: 9.90...10.00

3rd speed rpm : 850

Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 79.5...82.5

1000 s: (77.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AC

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F
 1st version kW : 224.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm³/

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1235...1265

4th rack travel in: 1400

Speed rpm : 0.00...1.00	Remarks:
LOW IDLE 1 Control lever position degrees: 12...20	:
Testing: Speed rpm : 100 Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 6.40...6.60 Rack travel in mm : 2.00 Speed rpm : 640...700	
CONSTANT REGULATION Speed rpm : 320...400	
TORQUE CONTROL Dimension a mm : 0.60 Torque control curve - 1st version 1st speed rpm : 1150 Rack travel in m: 9.00...9.10 2nd speed rpm : 650 Rack travel in m: 9.60...9.70 3rd speed rpm : 850 Rack travel in m: 9.10...9.30	
START CUT-OUT	
Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version Speed rpm : 650 Del.quantity cm ³ / : 75.5...78.5 1000 s: (73.0...81.0)	
RACK STOP ADJUSTMENT	
Speed rpm : 400	
BREAKAWAY	
1st version 1mm rack travel less than full load rack tr: 8.00 Speed rpm : 1190...1200	
STARTING FUEL DELIVERY	
Speed rpm : 100 Del.quantity cm ³ / : 120.0...130.0 1000 s: (117.0...133.0) Rack travel in mm : 14.30...14.70	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 106AD

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governer no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 220.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.80...8.90

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1400

Speed rpm : 0.00...1.00 Remarks:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.50
3rd speed rpm : 850
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AE
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governer no. : 0 420 212 114
 Customer-spec. information
 Customer : KHD
 Engine : F12L413F
 1st version kW : 213.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12
 Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8.60...8.70
 Del.quantity cm³/ : 7.3...7.5
 100 s: (7.1...7.7)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 73.0...75.0
 1000 : (71.0...77.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:

1st rack travel in: 7.60
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1230...1260
 4th rack travel in: 1400

Speed rpm : 0.00...1.00 Remarks:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...5.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.60...8.70
2nd speed rpm : 650
Rack travel in m: 9.20...9.30
3rd speed rpm : 850
Rack travel in m: 8.70...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 67.5...70.5
1000 s: (65.0...73.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AF
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114
 Customer-spec. information
 Customer : KHD
 Engine : F12L413F
 1st version kW : 206.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

009

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.40...8.50

Del.quantity cm³/ : 7.0...7.2

100 s: (6.8...7.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 70.0...72.0

1000 : (68.0...74.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1400

Speed rpm	0.00...1.00	Remarks:
LOW IDLE 1		:
Control lever		
position degrees: 12...20		

Testing:

Speed rpm	100
Minimum rack trave:	8.00
Speed rpm	300
Rack travel in mm:	6.40...6.60
Rack travel in mm:	2.00
Speed rpm	640...700

CONSTANT REGULATION

Speed rpm	320...400
-----------	-----------

TORQUE CONTROL

Dimension a mm	: 0.60
Torque control curve - 1st version	
1st speed rpm	: 1150
Rack travel in m:	8.40...8.50
2nd speed rpm	: 650
Rack travel in m:	9.00...9.10
3rd speed rpm	: 850
Rack travel in m:	8.50...8.70

START CUT-OUT

Speed 1/min	: 220 (240)
-------------	-------------

FUEL DELIVERY CHARACTERISTICS

1st version	
Speed rpm	: 650
Del.quantity cm ³ /	: 65.5...68.5
1000 s:	(63.0...71.0)

RACK STOP ADJUSTMENT

Speed rpm	: 400
-----------	-------

BREAKAWAY

1st version	
1mm rack travel less than	

full load rack tr:	7.40
Speed rpm	: 1190...1200

STARTING FUEL DELIVERY

Speed rpm	: 100
Del.quantity cm ³ /	: 120.0...130.0
1000 s:	(117.0...133.0)
Rack travel in mm:	14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 106AG

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governer no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F
 1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.10...8.20

Del.quantity cm³/ : 6.7...6.9

100 s: (6.5...7.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 67.0...69.0

1000 : (65.0...71.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1400

Speed rpm : 0.00...1.00 Remarks:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.10...8.20
2nd speed rpm : 650
Rack travel in m: 8.70...8.80
3rd speed rpm : 850
Rack travel in m: 8.20...8.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 61.5...64.5
1000 s: (59.0...67.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AH
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114
 Customer-spec. information
 Customer : KHD
 Engine : F12L413F
 1st version kW : 190.0
 Rated speed : 2300
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12
 Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1
BASIC SETTING
 1st speed rpm : 1150
 Rack travel in mm : 7.90...8.00
 Del.quantity cm³/ : 6.4...6.6
 100 s: (6.2...6.8)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)
GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80
FULL LOAD DELIV. AT FULL LOAD STOP
 1st version
 Speed rpm : 1150
 Del.quantity : 64.0...66.0
 1000 : (62.0...68.0)
 Spread cm³ : 3.50
 1000 : (6.00)
RATED SPEED
 1st version
 Control lever
 position degrees: 62...70
Testing:
 1st rack travel in: 6.90
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1220...1250
 4th rack travel in: 1400

Speed rpm : 0.00...1.00	Remarks:
LOW IDLE 1 Control lever position degrees: 12...20	:
Testing: Speed rpm : 100 Minimum rack travel: 8.00 Speed rpm : 300 Rack travel in mm : 6.40...6.60 Rack travel in mm : 2.00 Speed rpm : 640...700	
CONSTANT REGULATION Speed rpm : 320...400	
TORQUE CONTROL Dimension a mm : 0.60 Torque control curve - 1st version 1st speed rpm : 1150 Rack travel in m: 7.90...8.00 2nd speed rpm : 650 Rack travel in m: 8.50...8.60 3rd speed rpm : 850 Rack travel in m: 8.00...8.20	
START CUT-OUT	
Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version Speed rpm : 650 Del.quantity cm ³ / 1000 s: 57.5...60.5 1000 s: (55.0...63.0)	
RACK STOP ADJUSTMENT	
Speed rpm : 400	
BREAKAWAY	
1st version 1mm rack travel less than full load rack tr: 6.90 Speed rpm : 1190...1200	
STARTING FUEL DELIVERY	
Speed rpm : 100 Del.quantity cm ³ / 1000 s: 120.0...130.0 1000 s: (117.0...133.0) Rack travel in mm : 14.30...14.70	

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 113AA

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

Customer-spec. information

Customer : KHD

Engine : F12L413F

1st version kW : 268.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 9.2...9.4

100 s: (9.0...9.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 200
travel mm		: 0.70...0.80
2nd speed	rpm	: 500
travel mm		: 2.60...2.80
3rd speed	rpm	: 900
travel mm		: 5.60...5.80
4th speed	rpm	: 1500
travel mm		: 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1250
Del.quantity		: 92.0...94.0
1000		: (90.0...96.0)
Spread	cm ³	: 3.50
1000		: (6.00)

RATED SPEED	Del.quantity cm ³ / : 120.0...130.0 1000 s: (117.0...133.0)
1st version	Rack travel in mm : 13.50...14.20
Control lever	
position degrees: 116...124	
Testing:	Remarks:
1st rack travel in: 9.20	:
Speed rpm : 1290...1300	
2nd rack travel in: 4.50	
Speed rpm : 1350...1380	
4th rack travel in: 1500	
Speed rpm : 0.00...1.00	
LOW IDLE 1	
Control lever	
position degrees: 80...88	
Testing:	
Speed rpm : 100	
Minimum rack trave: 8.00	
Speed rpm : 300	
Rack travel in mm : 6.40...6.60	
CONSTANT REGULATION	
Speed rpm : 375...485	
TORQUE CONTROL	
Dimension a mm : 0.50	
Torque control curve - 1st version	
1st speed rpm : 1250	
Rack travel in m: 10.20...10.30	
2nd speed rpm : 650	
Rack travel in m: 10.70...10.80	
START CUT-OUT	
Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Speed rpm : 650	
Del.quantity cm ³ / : 90.5...93.5	
1000 s: (88.0...96.0)	
BREAKAWAY	
1st version	
1mm rack travel less than	
full load rack tr: 9.20	
Speed rpm : 1290...1300	
STARTING FUEL DELIVERY	
Speed rpm : 100	

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 640 113AB

 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

 Customer-spec. information
 Customer : KHD

 Engine : F12L413F

 1st version kW : 261.0
 Rated speed : 2500

 TEST BENCH REQUIREMENTS

 Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

 Rack travel in mm : 10.00...10.10

 Del.quantity cm³/ 100 s: 8.9...9.1
 (8.7...9.3)

 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ 100 s: 1.1...1.7
 (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80
 2nd speed rpm : 500
 travel mm : 2.60...2.80
 3rd speed rpm : 900
 travel mm : 5.60...5.80
 4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity 1000 : 89.0...91.0
 : (87.0...93.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ 1000 s: 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

:

Testing:

1st rack travel in: 9.00

Speed rpm : 1290...1300

2nd rack travel in: 4.50

Speed rpm : 1350...1380

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control Lever

position degrees: 80...88

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 10.00...10.10

2nd speed rpm : 650

Rack travel in m: 10.50...10.60

3rd speed rpm : 850

Rack travel in m: 10.20...10.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ 1000 s: 87.5...91.5

(85.0...94.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 640 113AC

 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

 Customer-spec. information
 Customer : KHD

 Engine : F12L413F

 1st version kW : 246.0
 Rated speed : 2500

 TEST BENCH REQUIREMENTS

 Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 8.4...8.6
 100 s: (8.2...8.8)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80
 2nd speed rpm : 500
 travel mm : 2.60...2.80
 3rd speed rpm : 900
 travel mm : 5.60...5.80
 4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1250
Del.quantity	: 84.0...86.0	
1000	: (82.0...88.0)	
Spread	cm ³	: 3.50
1000	: (6.00)	

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

Testing:

1st rack travel in: 8.50
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 640 113AD

 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

 Customer-spec. information
 Customer : KHD

 Engine : F12L413F

 1st version kW : 245.0
 Rated speed : 2500

 TEST BENCH REQUIREMENTS

 Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 8.4...8.6
 100 s: (8.2...8.8)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)

Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80
 2nd speed rpm : 500
 travel mm : 2.60...2.80
 3rd speed rpm : 900
 travel mm : 5.60...5.80
 4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1250
Del.quantity		: 84.0...86.0
	1000	: (82.0...88.0)
Spread	cm ³	: 3.50
	1000	: (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ 1000 s: 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Testing:

1st rack travel in: 8.50

Speed rpm : 1290...1300

2nd rack travel in: 4.50

Speed rpm : 1340...1370

4th rack travel in: 1500

Speed rpm : 0.00...1.00

Remarks:

:

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 9.50...9.60

2nd speed rpm : 650

Rack travel in m: 10.00...10.10

3rd speed rpm : 850

Rack travel in m: 9.70...9.90

START CUT-CUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 80.5...83.5

1000 s: (78.0...86.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 113AE

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 240.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.20...9.30

Del.quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 200
	travel mm	: 0.70...0.80
2nd speed	rpm	: 500
	travel mm	: 2.60...2.80
3rd speed	rpm	: 900
	travel mm	: 5.60...5.80
4th speed	rpm	: 1300
	travel mm	: 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1250
Del.quantity	1000	: 81.0...83.0
		: (79.0...85.0)
Spread	cm ³	: 3.50
	1000	: (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Testing:

1st rack travel in: 8.20
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

Remarks:

:

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.20...9.30
2nd speed rpm : 650
Rack travel in m: 9.70...9.80
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 640 113AF

 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

 Customer-spec. information
 Customer : KHD

 Engine : F12L413F

 1st version kW : 235.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.00...9.10

Del.quantity cm³ : 7.9...8.1

100 s: (7.7...8.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200

travel mm : 0.70...0.80

2nd speed rpm : 500

travel mm : 2.60...2.80

3rd speed rpm : 900

travel mm : 5.60...5.80

4th speed rpm : 1300

travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP**1st version**

Speed rpm : 1250

Del.quantity : 79.0...81.0

1000 : (77.0...83.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

:

Testing:

1st rack travel in: 8.00
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.50...9.60
3rd speed rpm : 850
Rack travel in m: 9.20...9.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AG

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

Customer-spec. information

Customer : KHD

Engine : F12L413F

1st version kW : 210.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8.30...8.40

Del.quantity cm³ / : 7.0...7.2

100 s: (6.8...7.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ / : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 200
travel mm		: 0.70...0.80
2nd speed	rpm	: 500
travel mm		: 2.60...2.80
3rd speed	rpm	: 900
travel mm		: 5.60...5.80
4th speed	rpm	: 1300
travel mm		: 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version		
Speed	rpm	: 1250
Del.quantity		: 70.0...72.0
1000		: (68.0...74.0)
Spread	cm ³	: 3.50
1000		: (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Speed rpm : 100
Del.quantity cm³/ 1000 s: 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

:

Testing:

1st rack travel in: 7.30
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1330...1360
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.30...8.40
2nd speed rpm : 650
Rack travel in m: 8.80...8.90
3rd speed rpm : 850
Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ 1000 s: 61.5...64.5
1000 s: (59.0...67.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AH

Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governer no. : 0 420 212 092

Customer-spec. information

Customer : KHD

Engine : F12L413F

1st version kW : 254.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200

travel mm : 0.70...0.80

2nd speed rpm : 500

travel mm : 2.60...2.80

3rd speed rpm : 900

travel mm : 5.60...5.80

4th speed rpm : 1300

travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED	Del.quantity cm ³ / : 120.0...130.0 1000 s: (117.0...133.0)
1st version	Rack travel in mm : 13.50...14.20
Testing:	Remarks:
1st rack travel in: 8.60 Speed rpm : 1290...1300	:
2nd rack travel in: 4.50 Speed rpm : 1340...1370	
4th rack travel in: 1500 Speed rpm : 0.00...1.00	
LOW IDLE 1	
Control lever position degrees: 80...88	
Testing:	
Speed rpm : 100 Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 6.40...6.60	
CONSTANT REGULATION	
Speed rpm : 375...485	
TORQUE CONTROL	
Dimension a mm : 0.50 Torque control curve - 1st version 1st speed rpm : 1250 Rack travel in m: 9.60...9.70 2nd speed rpm : 650 Rack travel in m: 10.10...10.20 3rd speed rpm : 850 Rack travel in m: 9.80...10.00	
START CUT-OUT	
Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Speed rpm : 650 Del.quantity cm ³ / : 84.5...87.5 1000 s: (82.0...90.0)	
BREAKAWAY	
1st version	
1mm rack travel less than full load rack tr: 8.60 Speed rpm : 1290...1300	
STARTING FUEL DELIVERY	
Speed rpm : 100	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 114AA

Injection pump
 Pump designation : PE12A95D610LS2590
 EP type number : 0 410 690 995
 Governor
 Governor design. : RQV300...1150AB1086-
 1L
 Governor no. : 0 420 212 221

Customer-spec. information
 Customer : KHD

Engine : F12L413F
 1st version kW : 224.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 7.8...8.0
 100 s: (7.6...8.2)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 600.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 600
travel mm		: 1.40...1.50
2nd speed	rpm	: 615
travel mm		: 1.70...1.90
3rd speed	rpm	: 665
travel mm		: 2.80...3.00
4th speed	rpm	: 1180
travel mm		: 8.50...8.60
5th speed	rpm	: 1225
travel mm		: 9.30...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1165
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150

Del.quantity : 78.0...80.0
1000 : (76.0...82.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 8.50
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 300
Minimum rack trave: 10.50
Speed rpm : 600
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 600...670

TORQUE CONTROL
Dimension a mm : 0.90
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.50...9.60
2nd speed rpm : 800
Rack travel in m: 10.40...10.50
3rd speed rpm : 990
Rack travel in m: 10.00...10.20
4th speed rpm : 1060
Rack travel in m: 9.50...9.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Compressor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 646 264AA

Injection pump
 Pump designation : PE6A95D410LS2450
 EP type number : 0 410 696 989
 Governor
 Governor design. : RQ750AB1041L
 Governor no. : 0 420 200 062

Customer-spec. information
 Customer : KHD

Engine : F6L413F

1st version kW : 89.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 10.50

Speed rpm : 750...755

2nd rack travel in: 4.50

Speed rpm : 780...788

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 646 264AB

Injection pump
 Pump designation : PE6A95D410LS2450
 EP type number : 0 410 696 989
 Governor
 Governor design. : RQ750AB1041L
 Governer no. : 0 420 200 062

Customer-spec. information
 Customer : KHD

Engine : F6L413F
 1st version kW : 87.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 11.50...11.60

Del.quantity cm³/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.80

Speed rpm : 750...755

2nd rack travel in: 4.50

Speed rpm : 780...788

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 648 111AA

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governer no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 174.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.00

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1330...1360

4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 845
Rack travel in m: 10.20...10.40
4th speed rpm : 970
Rack travel in m: 10.00...10.30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 88.5...91.5
1000 s: (86.0...94.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

D10

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 9.0...15.0
1000 s: (6.5...17.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 648 111AB

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governer no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 154.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8.90...9.00

Del.quantity cm³ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 7.90

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1325...1355

4th rack travel in: 1450	Speed rpm : 0.00...1.00	Speed rpm : 300
LOW IDLE 1		Rack travel in mm : 6.40...6.60
Setting point w/out bumper spring		Del.quantity cm ³ / : 9.0...15.0
Speed rpm : 300		1000 s: (6.5...17.5)
Rack travel in mm : 6.0		Spread cm ³ : 3.50

Testing:

Speed rpm : 100	Remarks:
Minimum rack trave: 7.50	:
Speed rpm : 300	
Rack travel in mm : 5.90...6.10	
Rack travel in mm : 2.00	
Speed rpm : 345...385	
Speed rpm : 550	
Maximum rack trave: 1.00	

TORQUE CONTROL

Dimension a mm : 0.25	
Torque control curve - 1st version	
1st speed rpm : 1250	
Rack travel in m: 8.90...9.00	
2nd speed rpm : 650	
Rack travel in m: 9.40...9.50	
3rd speed rpm : 845	
Rack travel in m: 9.00...9.20	
4th speed rpm : 970	
Rack travel in m: 8.80...9.10	

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650	
Del.quantity cm ³ / : 70.5...73.5	
1000 s: (68.0...76.0)	

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.90
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100	
Del.quantity cm ³ / : 120.0...130.0	
1000 s: (117.0...133.0)	
Rack travel in mm : 19.50...21.00	

LOW IDLE

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 648 111AC

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB9870L
 Governor no. : 0 420 202 277

Customer-spec. information

Customer : KHD

Engine : F8L413F

1st version kW : 103.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm³ : 0.3

100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.00

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1335...1365

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.00...10.10

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 648 122AA

Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RQ300/1150AB1074L
 Governer no. : 0 420 200 066

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 164.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 8.60

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1220...1250

4th rack travel in: 1325
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 350...390
Speed rpm : 450
Maximum rack trave: 1.00

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 1000
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 86.5...89.5
1000 s: (84.0...92.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 122AB

Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RQ300/1150AB1074L
 Governer no. : 0 420 200 066

Customer-spec. information

Customer : KHD

Engine : F8L413F
 1st version kW : 159.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.40...9.50

Del.quantity cm³/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 8.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1215...1245

4th rack travel in: 1325
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 350...390
Speed rpm : 450
Maximum rack trave: 1.00

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.40...9.50
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 1000
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 82.5...85.5
1000 s: (80.0...88.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 648 128AA

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1100AB1126L
 Governer no. : 0 420 212 140

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 151.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 7.9...8.1

100 s: (7.7...8.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
travel mm		: 0.70...0.80
2nd speed	rpm	: 450
travel mm		: 1.90...2.20
3rd speed	rpm	: 950
travel mm		: 6.40...6.60
4th speed	rpm	: 1215
travel mm		: 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1100
Del.quantity		: 79.0...81.0
1000		: (77.0...83.0)
Spread	cm ³	: 3.50
		: (6.00)

RATED SPEED**1st version**

Control lever

position degrees: 114...122

Testing:

1st rack travel in: 8.30

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1185...1215

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 78...86

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 415...535

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 9.30...9.41

2nd speed rpm : 650

Rack travel in m: 9.80...9.90

3rd speed rpm : 850

Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS**1st version**

Speed rpm : 650

Del.quantity cm³/ : 78.5...81.5

1000 s: (76.0...84.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY**1st version**

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.50...14.90

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 128AB

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1100AB1126L
 Governor no. : 0 420 212 140

Customer-spec. information

Customer : KHD

Engine : F8L413F

1st version kW : 121.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 7.90...8.01

Del.quantity cm³/

100 s: (6.0...6.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	:	300
	travel mm	:	0.70...0.80
2nd speed	rpm	:	450
	travel mm	:	1.90...2.20
3rd speed	rpm	:	950
	travel mm	:	6.40...6.60
4th speed	rpm	:	1215
	travel mm	:	8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	:	1100
Del.quantity		:	62.0...64.0
	1000	:	(60.0...66.0)
Spread	cm ³	:	3.50
	1000	:	(6.00)

RATED SPEED	Speed rpm : 1140...1150
1st version Control lever position degrees: 114...122	STARTING FUEL DELIVERY
Testing: 1st rack travel in: 6.90 Speed rpm : 1140...1150	Speed rpm : 100 Del.quantity cm ³ / 1000 s: 120.0...130.0 1000 s: (117.0...133.0)
2nd rack travel in: 4.00 Speed rpm : 1170...1200	Rack travel in mm : 14.50...14.90
4th rack travel in: 1350 Speed rpm : 0.00...1.00	Remarks:
LOW IDLE 1 Control lever position degrees: 78...86	:
Testing: Speed rpm : 100 Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 6.40...6.60	
CONSTANT REGULATION Speed rpm : 415...535	
TORQUE CONTROL Dimension a mm : ? Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 7.90...8.01	
2nd speed rpm : 650 Rack travel in m: 8.60...8.70	
3rd speed rpm : 850 Rack travel in m: 8.00...8.20	
START CUT-OUT Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version Speed rpm : 650 Del.quantity cm ³ / 1000 s: 58.5...61.5 1000 s: (56.0...64.0)	
RACK STOP ADJUSTMENT Speed rpm : 500	
BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 6.90	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 141AA

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1250AB1195L
 Governor no. : 0 420 212 172

Customer-spec. information

Customer : KHD

Engine : F8L413F

1st version kW : 169.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.80...9.90

Del.quantity cm³/

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.20...1.30
2nd speed	rpm	: 500
	travel mm	: 2.80...3.00
3rd speed	rpm	: 1000
	travel mm	: 6.50...6.70
4th speed	rpm	: 1290
	travel mm	: 8.60...8.80
5th speed	rpm	: 1375
	travel mm	: 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 8.80
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.30...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.80...9.90
2nd speed rpm : 650
Rack travel in m: 10.30...10.40
3rd speed rpm : 850
Rack travel in m: 10.00...10.20
4th speed rpm : 950
Rack travel in m: 9.80...10.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 142AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 FP type number : 0 410 698 988
 Governor
 Governor design. : RGV350...1250AB990-1
 Governor no. : 0 420 212 182
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 165.0
 Rated speed : 2500
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3
 Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - * : 0.50 (0.75)
 Time to cyl. no. : 1
BASIC SETTING
 1st speed rpm : 1225
 Rack travel in mm : 9.50...9.61
 Del.quantity cm³/ : 8.5...8.7
 100 s: (8.3...8.9)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 350.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm³ : 0.3
 100 s: (0.5)
**(B) Setting of injection pump
 with governor**
GUIDE SLEEVE TRAVEL
 1st speed rpm : 350
 travel mm : 1.20...1.30
 2nd speed rpm : 600
 travel mm : 3.80...4.00
 3rd speed rpm : 900
 travel mm : 5.20...5.50
 4th speed rpm : 1315
 travel mm : 9.30...9.70
GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1225
 Rack travel in mm : 15.20...17.80
FULL LOAD DELIV. AT FULL LOAD STOP
 1st version
 Speed rpm : 1225
 Del.quantity : 85.0...87.0
 1000 : (83.0...89.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Speed rpm : 100
Del.quantity cm³/ 1000 s: 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Testing:

1st rack travel in: 8.50
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1295...1325
4th rack travel in: 1450
Speed rpm : 0.00...1.00

Remarks:

:

LOW IDLE 1

Control lever

position degrees: 65...73

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 350
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 370...480

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1225
Rack travel in m: 9.50...9.61
2nd speed rpm : 700
Rack travel in m: 10.00...10.10
3rd speed rpm : 250
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm³/ 1000 s: 81.5...84.5
1000 s: (79.0...87.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 188AA

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governer no. : 0 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 206.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.60
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:
Speed rpm : 200
Minimum rack trave: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION
Speed rpm : 320...390

TORQUE CONTROL
Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 1000
Rack travel in m: 9.70...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 188AB

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack trave: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1160
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 1000
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E02

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 188AC

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm3/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack trave: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 1000
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E04

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 188AD

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 180.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.70...8.80

Del.quantity cm³/ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 74.0...76.0

1000 : (72.0...78.0)

EOS

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 7.70
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack trave: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.70...8.80
2nd speed rpm : 650
Rack travel in m: 9.30...9.40
3rd speed rpm : 1000
Rack travel in m: 8.80...9.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E06

1st version
1mm rack travel less than

full load rack tr: 7.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 188AE

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 171.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.30...8.41

Del.quantity cm³/ : 7.0...7.2

100 s: (5.8...7.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 70.0...72.0

1000 : (68.0...74.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 7.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack trave: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.30...8.40
2nd speed rpm : 650
Rack travel in m: 8.90...9.00
3rd speed rpm : 1000
Rack travel in m: 8.40...8.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 63.5...66.5
1000 s: (61.0...69.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E08

1st version
1mm rack travel less than

full load rack tr: 7.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AF

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governer no. : 0 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413FW

1st version kW : 192.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
travel mm		: 1.00...1.50
2nd speed	rpm	: 325
travel mm		: 1.50...2.00
3rd speed	rpm	: 760
travel mm		: 4.80...5.30
4th speed	rpm	: 1200
travel mm		: 8.60...9.10
5th speed	rpm	: 1420
travel mm		: 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 81.0...83.0
 1000 : (79.0...85.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 1000
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 81.5...84.5
1000 s: (79.0...87.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E10

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 189AA

Injection pump
 Pump designation : PE10A950610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1075AB988DL
 Governor no. : 0 420 214 230

Customer-spec. information

Customer : KHD
 Engine : F10L413F
 1st version kW : 188.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 9.30...9.40
 Del.quantity cm³/ : 8.2...8.4
 100 s: (8.0...8.6)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1075
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Del.quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 60...68

Testing:

1st rack travel in: 8.30
 Speed rpm : 1115...1125
 2nd rack travel in: 4.00
 Speed rpm : 1150...1180
 4th rack travel in: 1250
 Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 900
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 81.5...84.5
1000 s: (79.0...87.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 189AB

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1075AB988DL
 Governer no. : 0 420 214 230

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 178.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.00

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1145...1175

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 900
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
min rack travel less than

full load rack tr: 8.00
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 649 189AC

 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1075AB988DL
 Governor no. : 0 420 214 230

Customer-spec. information

Customer : KHD

 Engine : F10L413F

 1st version kW : 175.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 8.80...8.90

Del.quantity cm³ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 74.0...76.0

1000 : (72.0...78.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 7.80

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1145...1175

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.50
3rd speed rpm : 900
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 189AD

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1075AB988DL
 Governer no. : 0 420 214 230

Customer-spec. information
 Customer : KHD

Engine : F10L413FW

1st version kW : 168.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.00

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 440...500
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.70
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.70...9.80
3rd speed rpm : 900
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 77.5...80.5
1000 s: (75.0...83.0)
Speed rpm : 400
Del.quantity cm³/ : 78.5...82.5
1000 s: (76.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.00
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 Governer no. : 0 420 214 232
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 175.0
 Rated speed : 2000
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.30

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1070...1100

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Speed rpm : 700

Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 9.30...9.40

2nd speed rpm : 650

Rack travel in m: 9.90...10.00

3rd speed rpm : 850

Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 80.5...83.5

1000 s: (78.0...86.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

LOW IDLE

E20

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Del.quantity cm³/ : 11.0...17.0

1000 s: (8.5...19.5)

Spread cm³ : 3.50

1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 L
 Governer no. : 0 420 214 232
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 167.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 74.0...76.0

1000 : (72.0...78.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.00

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1065...1095

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 700
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 195AC

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 Governer no. : 0 420 214 232

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 163.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 8.80...8.90

Del.quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 7.80

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1065...1095

4th rack travel in: 1200

Speed rpm : 0.00...1.00	Speed rpm : 300
LOW IDLE 1 Control lever position degrees: 8...16	Rack travel in mm : 6.40...6.60
Del.quantity cm ³ / : 11.0...17.0	1000 s: (8.5...19.5)
Testing:	Spread cm ³ : 3.50
Speed rpm : 100	1000 s: (5.50)
Minimum rack trave: 8.00	
Speed rpm : 300	
Rack travel in mm : 6.40...6.60	
Speed rpm : 700	
Maximum rack trave: 1.00	
CONSTANT REGULATION	
Speed rpm : 350...500	
TORQUE CONTROL	
Dimension a mm : 0.60	
Torque control curve - 1st version:	
1st speed rpm : 1000	
Rack travel in m: 8.80...8.90	
2nd speed rpm : 650	
Rack travel in m: 9.40...9.50	
3rd speed rpm : 850	
Rack travel in m: 8.90...9.10	
START CUT-OUT	
Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Speed rpm : 650	
Del.quantity cm ³ / : 71.5...74.5	
1000 s: (69.0...77.0)	
RACK STOP ADJUSTMENT	
Speed rpm : 500	
BREAKAWAY	
1st version	
1mm rack travel less than	
full load rack tr: 7.80	
Speed rpm : 1040...1050	
STARTING FUEL DELIVERY	
Speed rpm : 100	
Del.quantity cm ³ / : 120.0...130.0	
1000 s: (117.0...133.0)	
LOW IDLE	
E24	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AD
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 Governer no. : 0 420 214 232
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 148.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Pack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance ± : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 8.20...8.30

Del.quantity cm³/ : 6.4...6.6

100 s: (6.2...6.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 64.0...66.0

1000 : (62.0...68.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 7.20

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1060...1090

4th rack travel in: 1200

Speed rpm : 0.00...1.00
LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 700
Maximum rack trave: 1.00

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 8.20...8.30
2nd speed rpm : 650
Rack travel in m: 8.80...8.90
3rd speed rpm : 850
Rack travel in m: 8.30...8.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 61.5...64.5
1000 s: (59.0...67.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AA

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governer no. : 0 420 202 274

Customer-spec. information

Customer : KHD

Engine : F10L413F
 1st version kW : 217.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.80...9.90

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 8.80

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.80...9.90
2nd speed rpm : 650
Rack travel in m: 10.30...10.40
3rd speed rpm : 850
Rack travel in m: 10.00...10.20

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 87.5...90.5
1000 s: (85.0...93.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AB

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 147.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.8...7.0

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.60

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1340...1370

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.80...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AC

 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

 Customer-spec. information
 Customer : KHD

 Engine : F10L413F

 1st version kW : 140.0
 Rated speed : 2500

 TEST BENCH REQUIREMENTS

 Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.50...10.60

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.8...7.0

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.50

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.50...10.60

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.80...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 200AD

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 130.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...7.0

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.00

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL.

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.00...10.10

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.80...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 202AA

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300/650...900AB10
 20L
 Governer no. : 0 420 212 099

Customer-spec. information
 Customer : KHD

Engine : F10L413F
 1st version kW : 160.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.20...9.31

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 910

Rack travel in mm : 15.00...18.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.20

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 950...980

4th rack travel in: 1050

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Speed rpm : 750

Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 340...400

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 900

Rack travel in m: 9.20...9.30

2nd speed rpm : 650

Rack travel in m: 9.20...9.30

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.20

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Del.quantity cm³/ : 11.0...17.0

1000 s: (8.5...19.5)

Spread cm³ : 3.50

1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 202AB

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300/650...900AB10
 20L
 Governer no. : 0 420 212 099

Customer-spec. information
 Customer : KHD

Engine : F10L413F
 1st version kW : 153.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.1...7.3

100 s: (6.9...7.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 910

Rack travel in mm : 15.00...18.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 71.0...73.0

1000 : (69.0...75.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.00

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 950...980

4th rack travel in: 1050

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 340...400

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.00...9.10

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 210AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB1055D
 L
 Governor no. : 0 420 214 244
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 1.50...1.80
 2nd speed rpm : 700
 travel mm : 3.65...3.95
 3rd speed rpm : 1100
 travel mm : 7.20...7.40
 4th speed rpm : 1250
 travel mm : 9.10...9.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1200
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.30

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1350

Speed rpm : 0.00...1.00

Speed rpm : 100
Del.quantity cm³/ 1000 s: 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:

APPLICATION

Combine-harvester

LOW IDLE 1

Control lever

position degrees: 7...15

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 320...425

TORQUE CONTROL

Dimension a mm : 1.00

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 9.30...9.40

2nd speed rpm : 850

Rack travel in m: 10.30...10.40

3rd speed rpm : 1000

Rack travel in m: 9.90...10.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 850

Del.quantity cm³/ 1000 s: 92.5...95.5

1000 s: (90.0...98.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AA

Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 Governer no. : 0 420 214 242

Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kW : 154.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 6.9...7.1

100 s: (6.7...7.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 69.0...71.0
 1000 : (67.0...73.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 800
Rack travel in m: 10.30...10.40
3rd speed rpm : 935
Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)
Speed rpm : 100
Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AB
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 Governer no. : 0 420 214 242
 Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kW : 148.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.10...9.20

Del.quantity cm³/ : 6.7...6.9

100 s: (6.5...7.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
 Del.quantity : 67.0...69.0
 1000 : (65.0...71.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version:
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 800
Rack travel in m: 10.10...10.20
3rd speed rpm : 935
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm³/ : 72.5...75.5
1000 s: (70.0...78.0)
Speed rpm : 100
Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AC
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB10470
 Governor no. : 0 420 214 242
 Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kW : 138.0
 Rated speed : 2300
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600
(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.80...8.90

Del.quantity cm³ : 6.3...6.5

100 s: (6.1...6.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.60

2nd speed rpm : 390

travel mm : 2.20...2.60

3rd speed rpm : 1195

travel mm : 8.70...9.10

4th speed rpm : 1245

travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 63.0...65.0

1000 : (61.0...67.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 7.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 67...75

Testing:

Speed rpm : 200

Minimum rack travel: 9.00

Speed rpm : 300

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 0.80

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.80...8.90

2nd speed rpm : 800

Rack travel in m: 9.60...9.70

3rd speed rpm : 935

Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm³/ : 68.5...71.5

1000 s: (66.0...74.0)

Speed rpm : 100

Del.quantity cm³/ : 64.5...69.5

1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AD
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 Governor no. : 0 420 214 242
 Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kW : 106.0
 Rated speed : 2300
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.00...8.10

Del.quantity cm³/ : 5.3...5.5

100 s: (5.1...5.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.10...1.60
2nd speed	rpm	: 390
	travel mm	: 2.20...2.60
3rd speed	rpm	: 1195
	travel mm	: 8.70...9.10
4th speed	rpm	: 1245
	travel mm	: 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1150
Del.quantity	cm ³	: 53.0...55.0
1000	cm ³	: (51.0...57.0)
Spread	cm ³	: 3.50
	1000	: (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 7.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1220...1250

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 67...75

Testing:

Speed rpm : 200

Minimum rack travel: 9.00

Speed rpm : 300

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.00...8.10

2nd speed rpm : 800

Rack travel in m: 9.00...9.10

3rd speed rpm : 935

Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm³/ : 58.5...61.5

1000 s: (56.0...64.0)

Speed rpm : 100

Del.quantity cm³/ : 64.5...69.5

1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AE

Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB10470
 Governer no. : L 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW
 1st version kW : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.50...9.60

Del.quantity cm³/

100 s: (6.9...7.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³/

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.60

2nd speed rpm : 390

travel mm : 2.20...2.60

3rd speed rpm : 1195

travel mm : 8.70...9.10

4th speed rpm : 1245

travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 71.0...73.0

1000 : (69.0...75.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.50...9.60
2nd speed rpm : 800
Rack travel in m: 10.30...10.40
3rd speed rpm : 935
Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del.quantity cm³/ : 73.5...76.5
1000 s: (71.0...79.0)
Speed rpm : 100
Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 219AF

Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW

1st version kW : 127.0
 Rated speed : -

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.40...8.50

Del.quantity cm³/ : 5.7...5.9

100 s: (5.5...6.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.60

2nd speed rpm : 390

travel mm : 2.20...2.60

3rd speed rpm : 1195

travel mm : 8.70...9.10

4th speed rpm : 1245

travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 57.0...59.0

1000 : (55.0...61.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 7.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1220...1250

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 67...75

Testing:

Speed rpm : 200

Minimum rack travel: 8.40

Speed rpm : 300

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.40...8.50

2nd speed rpm : 800

Rack travel in m: 9.40...9.50

3rd speed rpm : 935

Rack travel in m: 8.70...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm³/ : 62.5...65.5
1000 s: (60.0...68.0)

Speed rpm : 100

Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.40

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 235.0
 Rated speed : 2500
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del.quantity cm³ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.20...1.30
2nd speed	rpm	: 500
	travel mm	: 2.80...3.00
3rd speed	rpm	: 1000
	travel mm	: 6.50...6.70
4th speed	rpm	: 1290
	travel mm	: 8.60...8.80
5th speed	rpm	: 1375
	travel mm	: 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 96.5...98.5
 1000 : (94.5...100.5)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 9.40
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.40...10.50
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 1000
Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 95.0...98.0
1000 s: (92.5...100.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governer no. : 0 420 212 143
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 224.0
 Rated speed : 2500
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600
(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 9.2...9.4

100 s: (9.0...9.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor**GUIDE SLEEVE TRAVEL**

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 92.0...94.0

1000 : (90.0...96.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 9.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.60
3rd speed rpm : 1000
Rack travel in m: 10.10...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 90.5...93.5
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AC

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 217.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.80...9.90

Del.quantity cm³ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 8.80
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.80...9.90
2nd speed rpm : 650
Rack travel in m: 10.30...10.40
3rd speed rpm : 1000
Rack travel in m: 9.90...10.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 87.5...90.5
1000 s: (85.0...93.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AD

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governer no. : 0 420 212 143

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 211.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm3/ : 8.6...8.8

100 s: (8.4...9.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 8.50
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 1000
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 83.5...86.5
1000 s: (81.0...89.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.50

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AE

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governer no. : 0 420 212 143

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 206.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 8.30
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 1000
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 223AF

Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governer no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 200.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.10...9.20

Del.quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 8.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.10...9.20
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 1000
Rack travel in m: 9.20...9.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 76.5...79.5
1000 s: (74.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 241AA

Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1086L
 Governor no. : 0 420 212 113

Customer-spec. information

Customer : KHD

Engine : F10L413

1st version kW : 188.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
: (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.30...8.40

Del.quantity cm³/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.30...0.50

2nd speed rpm : 600

travel mm : 2.80...3.10

3rd speed rpm : 1000

travel mm : 6.40...6.70

4th speed rpm : 1200

travel mm : 8.80...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED	Speed rpm : 1190...1200
1st version Control lever position degrees: 54...62	STARTING FUEL DELIVERY
Testing: 1st rack travel in: 7.30 Speed rpm : 1190...1200	Speed rpm : 100 Del.quantity cm ³ / 1000 s: 120.0...130.0 (117.0...133.0)
2nd rack travel in: 4.00 Speed rpm : 1200...1230	Remarks:
4th rack travel in: 1350 Speed rpm : 0.00...1.00	Check electrically unlatched starting fuel delivery (EES) with 24 volt.
LOW IDLE 1 Control lever position degrees: 16...24	On activation of the starting solenoid, the start position must be reached.
Testing: Speed rpm : 100 Minimum rack travel: 8.00 Speed rpm : 300 Rack travel in mm : 6.40...6.60	APPLICATION Compressor
CONSTANT REGULATION Speed rpm : 420...540	
TORQUE CONTROL Dimension a mm : 0.90 Torque control curve - 1st version 1st speed rpm : 1150 Rack travel in m: 8.30...8.40 2nd speed rpm : 800 Rack travel in m: 9.20...9.30 3rd speed rpm : 1000 Rack travel in m: 8.90...9.10	
START CUT-OUT Speed 1/min : 220 (240)	
FUEL DELIVERY CHARACTERISTICS	
1st version Speed rpm : 800 Del.quantity cm ³ / 1000 s: 83.5...86.5 (81.0...89.0)	
RACK STOP ADJUSTMENT Speed rpm : 500	
BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 7.30	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 245AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1055-
 2L
 Governor no. : 0 420 212 216
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kW : 200.0
 Rated speed : 2500
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.10...9.20

Del.quantity cm³ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.40...1.50
2nd speed	rpm	: 410
	travel mm	: 2.50...2.70
3rd speed	rpm	: 460
	travel mm	: 3.00...3.20
4th speed	rpm	: 1305
	travel mm	: 8.60...8.80
5th speed	rpm	: 1375
	travel mm	: 9.60...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1
 Speed rpm : 1255
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version		
Speed	rpm	: 1250
Del.quantity		: 81.0...83.0
	1000	: (79.0...85.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1475
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 408...458

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.10...9.20
2nd speed rpm : 750
Rack travel in m: 10.10...10.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm³/ : 87.5...90.5
1000 s: (85.0...93.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 038AA
 Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RSV300...1000A7C1002
 Governer no. : 0 420 232 309
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 129.0
 Rated speed : 2000
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 7.5...7.7

100 s: (7.3...7.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.1...1.8

100 s: (0.8...2.0)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 75.0...77.0

1000 : (73.0...79.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.30

Speed rpm : 940...950

2nd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1150
Speed rpm : 0.30...1.70

LOW IDLE 1
Control Lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...510

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.30...9.40
2nd speed rpm : 700
Rack travel in m: 9.70...9.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.20...14.60

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 038AB
 Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RSV300...1000A7C1002
 Governor no. : 0 420 232 309
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 123.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 6.9...7.1

100 s: (6.7...7.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.1...1.8

100 s: (0.8...2.0)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 69.0...71.0

1000 : (67.0...73.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:

1st rack travel in: 8.00

Speed rpm : 940...950

2nd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1150
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.00...9.10
2nd speed rpm : 700
Rack travel in m: 9.40...9.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.20...14.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 188.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 96.5...98.5

1000 : (94.5...100.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 9.40

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1330...1360
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.40...10.50
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 850
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 95.0...98.0
1000 s: (92.5...100.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AB
 Injection pump
 Pump designation : PE8A950410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 174.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 9.00

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.60
3rd speed rpm : 850
Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 89.5...92.5
1000 s: (87.0...95.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

G20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AC
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 169.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.70...9.80

Del.quantity cm³/ : 8.6...8.8

100 s: (8.4...9.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:

1st rack travel in: 8.70
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.70...9.80
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 81.5...84.5
1000 s: (79.0...87.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AD
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 165.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.50

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 678 040AE

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 162.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250
 Del.quantity : 82.0...84.0

1000 : (80.0...86.0)
 Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:

1st rack travel in: 8.30
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 850
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 76.5...79.5
1000 s: (74.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AF
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 156.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.9...8.1

100 s: (7.7...8.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 79.0...81.0

1000 : (77.0...83.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.00

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.50...9.61
3rd speed rpm : 850
Rack travel in m: 9.20...9.40

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AG
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 154.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8.90...9.00

Del.quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.90

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.90...9.00
2nd speed rpm : 650
Rack travel in m: 9.40...9.51
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.90
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H02

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AH
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 152.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8.80...8.90

Del.quantity cm³ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.80

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.30...9.41
3rd speed rpm : 850
Rack travel in m: 9.00...9.20

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H04

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AI
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 130.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 7.70...7.80

Del.quantity cm³/ : 6.4...6.6

100 s: (6.2...6.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 64.0...66.0

1000 : (62.0...68.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 6.70

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

:

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 7.70...7.80
2nd speed rpm : 650
Rack travel in m: 8.30...8.40
3rd speed rpm : 850
Rack travel in m: 7.80...8.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 54.5...57.5
(52.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 6.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
(113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AK
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 165.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.60

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AL
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 157.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3
 Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1
BASIC SETTING
 1st speed rpm : 1150
 Rack travel in mm : 9.30...9.40
 Del.quantity cm³/ : 8.3...8.5
 100 s: (8.1...8.7)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)
GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00
 Governor spring pre-tension
 Click setting x : ?
FULL LOAD DELIV. AT FULL LOAD STOP
 1st version
 Speed rpm : 1150
 Del.quantity : 83.0...85.0
 1000 : (81.0...87.0)
 Spread cm³ : 3.50
 1000 : (6.00)
RATED SPEED
 1st version
 Control lever
 position degrees: ?
 Testing:
 1st rack travel in: 8.30
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 400 678 040AM

 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310

 Customer-spec. information
 Customer : KHD

 Engine : F8L413F

 1st version kW : 150.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm³ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.71
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AN
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 147.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.80...8.90

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.51
3rd speed rpm : 850
Rack travel in m: 8.90...9.10

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AO
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 140.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.50...8.60

Del.quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.50

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.50...8.60
2nd speed rpm : 650
Rack travel in m: 9.10...9.21
3rd speed rpm : 850
Rack travel in m: 8.60...8.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 67.5...70.5
1000 s: (65.0...73.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AP
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310

Customer-spec. information

Customer : KHD
 Engine : F8L413F
 1st version kW : 104.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 6.80...6.90

Del.quantity cm³ : 5.1...5.3

100 s: (4.9...5.5)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 51.0...53.0
 1000 : (49.0...55.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 5.80
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 6.80...6.90
2nd speed rpm : 650
Rack travel in m: 7.60...7.71
3rd speed rpm : 850
Rack travel in m: 6.90...7.10

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 48.5...51.5
(46.0...54.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 5.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
(113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AQ
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 152.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.30

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H2O

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AR
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 157.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.60...9.70

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.60

Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

:

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 86.5...89.5
1000 s: (84.0...92.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.60
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 678 040AS

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governer no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 149.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.20...9.30

Del.quantity cm³/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.20

Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.20...9.30
2nd speed rpm : 650
Rack travel in m: 9.80...9.91
3rd speed rpm : 850
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.20
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AT
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 142.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - " : 0.50 (0.75)
 Time to cyl. no. : 1
BASIC SETTING
 1st speed rpm : 1075
 Rack travel in mm : 8.90...9.00
 Del.quantity cm³/ : 7.5...7.8
 100 s: (7.3...8.0)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00
 Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP
 1st version
 Speed rpm : 1075
 Del.quantity : 75.5...78.5
 1000 : (73.5...80.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.90
 Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.90...9.00
2nd speed rpm : 650
Rack travel in m: 9.50...9.61
3rd speed rpm : 850
Rack travel in m: 9.00...9.20

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.90
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AU

 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310

 Customer-spec. information
 Customer : KHD

 Engine : F8L413F

 1st version kW : 137.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 8.70...8.80

Del.quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.70

Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.70...8.80
2nd speed rpm : 650
Rack travel in m: 9.30...9.41
3rd speed rpm : 850
Rack travel in m: 8.80...9.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.70
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AV
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 127.0
 Rated speed : 2650
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3
 Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1
BASIC SETTING
 1st speed rpm : 1075
 Rack travel in mm : 8.30...8.40
 Del.quantity cm³/ : 6.6...6.8
 100 s: (6.4...7.0)
 Spread cm³ : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)
GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00
 Governor spring pre-tension
 Click setting x : ?
FULL LOAD DELIV. AT FULL LOAD STOP
 1st version
 Speed rpm : 1075
 Del.quantity : 66.0...68.0
 1000 : (64.0...70.0)
 Spread cm³ : 3.50
 1000 : (6.00)
RATED SPEED
 1st version
 Control lever
 position degrees: ?
Testing:
 1st rack travel in: 7.30
 Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.30...8.40
2nd speed rpm : 550
Rack travel in m: 8.90...9.01
3rd speed rpm : 850
Rack travel in m: 8.40...8.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 63.5...66.5
1000 s: (61.0...69.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.30
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J02

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AW
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 147.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9.60...9.70
 Del.quantity cm³/ : 8.3...8.5
 100 s: (8.1...8.7)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00
 Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del.quantity : 83.0...85.0
 1000 : (81.0...87.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.60
 Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 83.5...86.5
1000 s: (81.0...89.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.60
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J04

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AX

 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governer no. : 0 420 232 310

 Customer-spec. information
 Customer : KHD

 Engine : F8L413F

 1st version kW : 140.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 419 992 198

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 014

 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.30

Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.60...9.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J06

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AY
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 Governer no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 134.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175

Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del.quantity : 74.0...76.0
 1000 : (72.0...78.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.00
 Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.71
3rd speed rpm : 850
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ 1000 s: 74.5...77.5
1000 s: (72.0...80.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.00
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 845 050AA

Injection pump
 Pump designation : PE55A95D410RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governer no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kW : 70.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.10...10.20

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.10

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 goftion : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 845 050AB

Injection pump
 Pump designation : PES5A95D410RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governer no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kW : 68.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 Per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.80...9.90

Del.quantity cm³/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.80

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 845 050AC

Injection pump
 Pump designation : PES5A95D410RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kW : 64.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.40...9.50

Del.quantity cm³/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.40

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 845 051AA

Injection pump
 Pump designation : PES5A95D410RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ900AB1054L
 Governer no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kW : 78.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.40...9.50

Del.quantity cm³/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.40

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 432AA

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB1240L
 Governer no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 92.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.40

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 12.90...13.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 432AB

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB1240L
 Governer no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 89.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.40

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)
Rack travel in mm : 12.90...13.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 432AC

Injection pump
 Pump designation : PES6A95D41URS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB1240L
 Governer no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 82.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.80...9.90

Del.quantity cm³/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700
 Del.quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50
 1000 : (6.00)

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version
 1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)

Rack travel in mm : 12.90...13.20

Remarks:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 433AA

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governer no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 107.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 433AB

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governor no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 103.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 433AC

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governor no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 95.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.40...9.50

Del.quantity cm3/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm3 : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.40

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 433AD

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governer no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 92.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.10...9.20

Del.quantity cm³/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.10

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 846 562A

Injection pump
 Pump designation : PES6A100D410RS2687
 EP type number : 0 410 806 001
 Governor
 Governor design. : RQV400...1000AB1231L
 Governor no. : 0 420 212 206

Customer-spec. information
 Customer : LIEBHERR

Engine : D906TI

1st version kW : 169.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 13.9...14.1

100 s: (13.7...14.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 6.8...7.0
 Del.quantity cm³/ : 1.0...1.6
 100 s: (0.7...1.8)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 440
travel mm		: 2.10...2.30
2nd speed	rpm	: 500
travel mm		: 3.00...3.50
3rd speed	rpm	: 585
travel mm		: 3.50...4.00
4th speed	rpm	: 1045
travel mm		: 8.10...8.20
5th speed	rpm	: 1135
travel mm		: 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1065

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700
Del.quantity : 139.0...141.0
1000 : (137.0...143.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 12.70
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 66...74

Testing:
Speed rpm : 100
Minimum rack trave: 8.30
Speed rpm : 400
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION
Speed rpm : 425...500

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 500
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.70...13.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.60...12.80
2nd pressure hPa : 435
Rack travel in m: 13.30...13.40
3rd pressure hPa : 410
Rack travel in m: 12.80...13.00

START CUT-OUT

Speed 1/min : 320 (340)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.5...138.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 104.5...106.5
1000 s: (102.5...108.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.70
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.80...7.00
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 876 198AG

Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RSV300...1150A8C616D
 Governer no. : 0 420 232 323

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 113.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 00?

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 10.30...10.40

Del.quantity cm³/ : 10.3...10.5

100 s: (10.1...10.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030
 Del.quantity : 103.0...105.0
 1000 : (101.0...107.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:

1st rack travel in: 9.30
 Speed rpm : 1075...1085
 2nd rack travel in: 4.00
 Speed rpm : 1100...1130
 3rd rack travel in: 4.00

Speed rpm : 1135...1165
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 535...595

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 10.30...10.40
2nd speed rpm : 500
Rack travel in m: 10.40...10.50
4th speed rpm : 750
Rack travel in m: 10.20...10.30

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1075...1085

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.80...16.20

Remarks:

:

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 a
 Edition : 21.08.92
 Replaces : 02.89
 Test oil : ISO-4113

Combination no. : 0 400 876 322

Injection pump
 Pump designation : PES6A95D410RS2689
 EP type number : 0 410 896 916
 Governor
 Governor design. : RSV400...1000A1C2187
 L

Governer no. : 0 420 232 387

Customer-spec. information
 Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 95...103

K07

Testing:
1st rack travel in: 9.40
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1050...1080
3rd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1230
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.9

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 400
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 530...590

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.40...10.50
2nd speed rpm : 500
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 77.5...80.5
1000 s: (75.0...83.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.40
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400

K08

Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 a 5
 Edition : 03.09.92
 Replaces : 07.02.89
 Test oil : ISO-4113

Combination no. : 0 400 876 322E

Injection pump
 Pump designation : PES6A95D410RS2689
 EP type number : 0 410 896 916
 Governor
 Governor design. : RSV400...1000A1C2187
 Governer no. : 0 420 232 387

Customer-spec. information
 Customer : LIEBHERR

Engine : D906 TB

1st version kW : 120.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.30...11.50

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setcng x : 2.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 89...97

Testing:	Rack travel in mm : 6.30...6.50
1st rack travel in: 10.30	Del.quantity cm ³ / : 10.0...16.0
Speed rpm : 1040...1050	1000 s: (7.5...18.5)
2nd rack travel in: 4.00	Spread cm ³ : 3.50
Speed rpm : 1030...1060	1000 s: (5.50)
3rd rack travel in: 4.00	
Speed rpm : 1055...1085	
4th rack travel in: 1220	
Speed rpm : 0.30...1.40	
 LOW IDLE 1	
Control lever	
position degrees: 63...71	
Setting point w/out bumper spring	
Speed rpm : 400	
Rack travel in mm : 5.9	
 Testing:	
Speed rpm : 100	
Minimum rack trave: 19.50	
Speed rpm : 400	
Rack travel in mm : 6.30...6.50	
Rack travel in mm : 2.00	
Speed rpm : 510...570	
 TORQUE CONTROL	
Torque control curve - 1st version	
1st speed rpm : 980	
Rack travel in m: 11.30...11.40	
2nd speed rpm : 500	
Rack travel in m: 11.30...11.50	
 FUEL DELIVERY CHARACTERISTICS	
 1st version	
Speed rpm : 800	
Del.quantity cm ³ / : 105.5...108.5	
1000 s: (103.0...111.0)	
 BREAKAWAY	
1st version	
1mm rack travel less than	
full load rack tr: 9.40	
Speed rpm : 1040...1050	
 STARTING FUEL DELIVERY	
Speed rpm : 100	
Del.quantity cm ³ / : 120.0...130.0	
1000 s: (117.0...133.0)	
Rack travel in mm : 19.50...21.00	
 LOW IDLE	
Speed rpm : 400	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE
 Edition : 24.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 876 398

Injection pump
 Pump designation : PES6A100D410RS2754
 EP type number : 0 410 806 002
 Governor
 Governor design. : RSV425...1100AOC2235
 -2L
 Governor no. : 0 420 232 576

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076TRW06

1st version kW : 98.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 8.3...8.5

100 s: (8.1...8.7)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 2.6...3.0

100 s: (2.3...3.2)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 83.5...85.5

1000 : (81.5...87.5)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 8.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1200...1210
3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 13.00
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.1

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 425
Rack travel in mm : 5.50...5.70

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.84...10.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 103.0...107.0
1000 s: (101.0...109.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 26.0...30.0
1000 s: (23.5...32.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks: : JOHN DEERE # RE51909
Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : STE 10,0 g1
 Edition : 31.07.92
 Replaces : 01.91
 Test oil : ISO-4113

Combination no. : 0 401 846 941

Injection pump
 Pump designation : PE6P110A720RS3243
 EP type number : 0 411 816 770
 Governor
 Governor design. : RQ300/1100PA412-5
 Governor no. : 0 421 801 562

Customer-spec. information
 Customer : SNF

Engine : WD615.63

1st version kW : 204.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 3.9...4.1

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 14.60...15.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1200

Del.quantity : 164.0...166.0

1000 : (161.0...169.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 15.0

Testing:

1st rack travel in: 11.70

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.0

Testing:
Speed rpm : 100
Minimum rack trave: 5.50
Speed rpm : 300
Rack travel in mm : 3.90...4.10
Rack travel in mm : 2.00
Speed rpm : 350...390

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.70...12.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.10
2nd pressure hPa : 500
Rack travel in m: 11.90...12.00
3rd pressure hPa : 325
Rack travel in m: 10.30...10.50

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 700
Del.quantity cm³/ : 172.0...176.0
1000 s: (169.0...179.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 120.0...122.0
1000 s: (117.0...125.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 232.0...272.0
1000 s: (228.0...276.0)
Rack travel in mm : 17.50...18.50

Remarks:
:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 848 708A

Injection pump
 Pump designation : PE8P110A320LS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQ300/1150PA187-3
 Governor no. : 0 421 801 133

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 195.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.80...11.90

Del.quantity cm³/

100 s: (10.1...10.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.2...8.4

Del.quantity cm³/

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 104.0...106.0

1000 : (101.5...108.5)

Spread cm³ : 4.00

1000 : (7.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.5

Testing:

1st rack travel in: 10.80

Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.3

Testing:

Speed rpm : 100
Minimum rack trave: 10.20
Speed rpm : 300
Rack travel in mm : 8.20...8.40
Rack travel in mm : 2.00
Speed rpm : 420...460
Speed rpm : 550
Maximum rack trave: 1.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del.quantity cm³/ : 118.0...122.0
1000 s: (115.0...125.0)
Spread cm³ : 5.00
1000 s: (8.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 a 5
 Edition : 27.09.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 848 756A

Injection pump
 Pump designation : PE8P110A320LS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQV300...1150PA486-3
 Governor no. : 0 421 813 411

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM422

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.20...11.40

Del.quantity cm³/

100 s: (9.6...10.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 8.4...8.6
 Del.quantity cm³/

100 s: (1.1...2.2)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.50...2.00
2nd speed	rpm	: 900
	travel mm	: 6.40...6.90
3rd speed	rpm	: 1206
	travel mm	: 8.30...8.80
4th speed	rpm	: 1302
	travel mm	: 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1230

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity cm³/

1000 : (96.5...103.5)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 10.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 18...26

Testing:

Speed rpm : 100

Minimum rack trave: 9.70

Speed rpm : 300

Rack travel in mm : 8.00...8.20

Rack travel in mm : 2.00

Speed rpm : 410...480

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 11.00...11.10

2nd speed rpm : 600

Rack travel in m: 11.20...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1150

Del.quantity cm³/ : 112.0...116.0

1000 s: (109.0...119.0)

Spread cm³ : 7.00

1000 s: (10.0)

Speed rpm : 600

Del.quantity cm³/ : 92.0...96.0

1000 s: (89.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 b1
 Edition : 21.08.92
 Replaces : 02.91
 Test oil : ISO-4113

Combination no. : 0 401 876 343

Injection pump
 Pump designation : PEGP120A320RS500
 EP type number : 0 411 826 140
 Governor
 Governor design. : RSV250...750P7A507-3
 Governor no. : 0 421 833 358

Customer-spec. information
 Customer : DAF

Engine : DKZ 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.80...13.90

Del.quantity cm³/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.7...6.9

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 90...98

Testing:

1st rack travel in: 12.80

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 780...795

4th rack travel in: 950

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 66...74

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.8

Speed rpm : 250

Rack travel in mm : 6.70...6.90

Rack travel in mm : 2.00

Speed rpm : 260...300

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.80

Speed rpm : 750...755

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.70...6.90

Del.quantity cm³/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm³ : 8.00

1000 s: (12.00)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113

Combination no. : 0 401 876 791

Injection pump
 Pump designation : PE6P110A320LS3859
 EP type number : 0 411 816 784
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9306 TI

1st version kW : 230.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 14.10...14.20

Del.quantity cm³/ : 18.3...18.5

100 s: (18.0...18.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 1.9...2.4

100 s: (1.6...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1200

Del.quantity : 183.0...185.0

1000 : (180.5...187.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 96...102

Testing:

1st rack travel in: 13.10

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1080...1110
3rd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1260
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.9
Speed rpm : 400
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 520...580

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 14.10...14.20
2nd speed rpm : 500
Rack travel in m: 14.10...14.30
3rd speed rpm : 350
Rack travel in m: 15.30...15.90

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 550
Pressure hPa : 1200
Rack travel mm : 14.10...14.20

Measurement
Speed 1/min : 550

1st pressure hPa : -
Rack travel in m: 13.00...13.20
2nd pressure hPa : 525
Rack travel in m: 13.80...13.90
3rd pressure hPa : 475
Rack travel in m: 13.50...13.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm3/ : 160.0...162.0
1000 s: (157.5...164.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.10
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 19.0...24.0
1000 s: (16.5...26.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 26.06.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 878 717

Injection pump
 Pump designation : PE8P110A320LS3853
 EP type number : 0 411 818 720
 Governor
 Governor design. : RSV400...1000P1A554
 Governer no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 14.60...14.70
 Del.quantity cm³/ : 19.6...19.8
 100 s: (19.3...20.1)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1500
 Del.quantity : 196.0...198.0
 1000 : (193.0...201.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:
 1st rack travel in: 13.60
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 980...1020
 3rd rack travel in: 4.00
 Speed rpm : 1020...1040
 4th rack travel in: 1100

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 72...78

Setting point w/out bumper spring

Speed rpm : 400

Rack travel in mm : 5.7

Speed rpm : 400

Rack travel in mm : 5.60...5.80

Rack travel in mm : 2.00

Speed rpm : 430...490

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 900

Rack travel in m: 14.60...14.70

2nd speed rpm : 500

Rack travel in m: 14.60...14.80

3rd speed rpm : 350

Rack travel in m: 15.80...16.40

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1500

Rack travel mm : 14.60...14.70

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 13.60...13.80

2nd pressure hPa : 760

Rack travel in m: 14.20...14.40

3rd pressure hPa : 690

Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 550

Del.quantity cm³/ : 171.0...173.0

1000 s: (168.0...176.0)

Spread cm³ : 8.00

1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.60

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 150.0...170.0

1000 s: (146.0...174.0)

Rack travel in mm : 20.00...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : D 401 878 717

Injection pump
 Pump designation : PE8P110A320LS3853-1
 EP type number : 0 411 818 726
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 833 376

Customer-spec. information

Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 14.60...14.70
 Del.quantity cm³/ : 19.6...19.8
 100 s: (19.3...20.1)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.8...6.0
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1500
 Del.quantity : 196.0...198.0
 1000 : (193.0...201.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:
 1st rack travel in: 13.60
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 985...1015

3rd rack travel in: 4.00
Speed rpm : 1010...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 72...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 490...550

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 14.60...14.70
2nd speed rpm : 500
Rack travel in m: 14.60...14.80
3rd speed rpm : 350
Rack travel in m: 15.80...16.40

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1500
Rack travel mm : 14.60...14.70

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 13.60...13.80
2nd pressure hPa : 760
Rack travel in m: 14.20...14.40
3rd pressure hPa : 690
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed cm : 550
Del.quantity cm³/ : 171.0...173.0
1000 s: (168.0...176.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...174.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 6.00
1000 s: (10.00)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 26.06.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 878 717A

Injection pump
 Pump designation : PE8P110A320LS3853
 EP type number : 0 411 818 720
 Governor
 Governor design. : RSV400...1000P1A554
 Governer no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 14.60...14.70

Del.quantity cm³/ : 19.6...19.8

100 s: (19.3...20.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.6

100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 1500

Del.quantity : 196.0...198.0
 1000 : (193.0...201.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 95...103

Testing:

1st rack travel in: 13.60

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 980...1020

3rd rack travel in: 4.00
Speed rpm : 1020...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 72...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7
Speed rpm : 400
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 14.60...14.70
2nd speed rpm : 500
Rack travel in m: 14.60...14.80
3rd speed rpm : 350
Rack travel in m: 15.80...16.40

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1500
Rack travel mm : 14.60...14.70

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 13.60...13.80
2nd pressure hPa : 760
Rack travel in m: 14.20...14.40
3rd pressure hPa : 690
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ 1000 s: 171.0...173.0
1000 s: (168.0...176.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

K28

1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 150.0...170.0
1000 s: (146.0...174.0)
Rack travel in mm : 20.00...21.00

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 26.06.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 878 7178

Injection pump
 Pump designation : PE8P110A320LS3853
 EP type number : 0 411 818 720
 Governor
 Governor design. : RSV400...1000P1A554
 Governer no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 T

1st version kW : 255.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 13.40...13.50
 Del.quantity cm³/ : 16.6...16.8
 100 s: (16.3...17.1)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1500
 Del.quantity : 166.0...168.0
 1000 : (163.0...171.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 96...102

Testing:
 1st rack travel in: 12.40
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 980...1020

3rd rack travel in: 4.00
Speed rpm : 1020...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7
Speed rpm : 400
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 13.40...13.50
2nd speed rpm : 500
Rack travel in m: 13.40...13.60
3rd speed rpm : 350
Rack travel in m: 14.60...15.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 550
Pressure hPa : 1500
Rack travel mm : 13.40...13.50

Measurement
Speed 1/min : 550

1st pressure hPa : -
Rack travel in m: 12.50...12.60
2nd pressure hPa : 620
Rack travel in m: 12.90...13.00

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 152.0...154.0
1000 s: (149.0...157.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)
Rack travel in mm : 20.00...21.00

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 10,0 d1
 Edition : 31.07.92
 Replaces : 12.90
 Test oil : ISO-4113

Combination no. : 0 402 035 029

Injection pump
 Pump designation : PES5P120A720/3LS528
 EP type number : 0 412 025 022
 Governor
 Governor design. : RQ325/1000PA813-20
 Governor no. : 0 421 801 567

Customer-spec. information
 Customer : MAN

Engine : D2865LF/LU05

1st version kW : 198.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 13.00...14.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 5

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 21.5...21.7

100 s: (21.2...22.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 325.0

Rack travel in mm : 4.3...4.7

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 215.0...217.0

1000 : (212.0...220.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.60

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 4.5

Testing:
Speed rpm : 100
Minimum rack trave: 6.00
Speed rpm : 325
Rack travel in mm : 4.40...4.60
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.10...12.20
2nd speed rpm : 550
Rack travel in m: 12.50...12.90
3rd speed rpm : 825
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.60...11.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 150
Rack travel in m: 9.60...9.70
3rd pressure hPa : 390
Rack travel in m: 10.90...11.20

START CUT-OUT

Speed 1/min : 245 (265)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm³/ : 215.0...221.0
1000 s: (212.0...224.0)
Aneroid pressure h: 1000
Speed rpm : 550
Del.quantity cm³/ : 205.0...211.0
1000 s: (202.0...214.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 10.60
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE
Speed rpm : 325
Rack travel in mm : 4.30...4.70
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7121
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 5
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a30
 Edition : 21.08.92
 Replaces : 11.88
 Test oil : ISO-4113

Combination no. : 0 402 036 071

Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813-3
 Governor no. : 0 421 801 422

Customer-spec. information

Customer : MAN

Engine : D2866TOH

1st version kW : 213.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.70...10.80

Del.quantity cm³/ : 19.3...19.5

100 s: (19.0...19.8)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.7...4.9

Del.quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 750

Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 193.5...195.5

1000 : (190.5...198.5)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 750

Rack travel in mm : 15.5

Testing:

1st rack travel in: 9.30
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.8

Testing:
Speed rpm : 100
Minimum rack trave: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 385...425

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.40...10.50
2nd speed rpm : 750
Rack travel in m: 11.20...11.50
3rd speed rpm : 980
Rack travel in m: 11.00...11.20
4th speed rpm : 1030
Rack travel in m: 10.50...10.80

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.70...10.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 240
Rack travel in m: 9.00...9.20
3rd pressure hPa : 520
Rack travel in m: 10.00...10.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

L06

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 196.5...202.5
1000 s: (193.5...205.5)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 186.0...192.0
1000 s: (183.0...195.0)
Aneroid pressure h: 20
Speed rpm : 500
Del.quantity cm3/ : 168.0...180.0
1000 s: (165.0...183.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 2-7896

Setting and blocking of pointer of start-of-delivery sensor on cyl. 6 start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN
 Edition : 28.06.91
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 036 077A

Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813-6
 Governor no. : 0 421 801 466

Cust. part no. : 3-7167

Customer-spec. information
 Customer : MAN

Engine : D2866TUH/001

1st version kW : 222.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.20...11.30

Del.quantity cm³/ : 19.5...19.7

100 s: (19.2...20.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.2...5.4

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 750

Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 195.0...197.0

1000 : (192.0...200.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 750

Rack travel in mm : 15.5

Testing:
1st rack travel in: 10.20
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.3

Testing:
Speed rpm : 100
Minimum rack trave: 6.70
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 390...430

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70
2nd speed rpm : 1050
Rack travel in m: 11.50...11.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.20...11.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 270
Rack travel in m: 9.10...9.20
3rd pressure hPa : 450
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1050

Del.quantity cm³/ : 204.0...208.0
1000 s: (201.0...211.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 u5
 Edition : 21.08.92
 Replaces : 12.90
 Test oil : ISO-4113

Combination no. : 0 402 036 743

Injection pump
 Pump designation : PES6P120A720/3LS3255
 EP type number : 0 412 026 739
 Governor
 Governor design. : RQ300/1000PA813-19
 Governer no. : 0 421 801 561

Customer-spec. information
 Customer : MAN

Engine : D2866LF05

1st version kW : 272.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 14.50...15.50
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 15.10...15.20

Del.quantity cm³/ : 24.4...24.6

100 s: (24.1...24.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.8...5.2

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 550

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 244.0...246.0

1000 : (241.0...249.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 20.0

Testing:

1st rack travel in: 14.10

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.0

Testing:
Speed rpm : 200
Minimum rack trave: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 15.10...15.20
2nd speed rpm : 700
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 15.10...15.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.80...12.00
2nd pressure hPa : 110
Rack travel in m: 12.10...12.20
3rd pressure hPa : 470
Rack travel in m: 13.80...14.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1000
Del.quantity cm³/ : 241.0...247.0
1000 s: (238.0...250.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.10
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 220.0...240.0
1000 s: (216.0...244.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7037

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 036 754

Injection pump
 Pump designation : PES6P120A720/3LS3308
 EP type number : 0 412 026 759
 Governor
 Governor design. : RQ300/1000PA813-19
 Governor no. : 0 421 801 561

Customer-spec. information
 Customer : MAN

Engine : D2866LF05

1st version kW : 272.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 14.50...15.50
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - " : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 15.10...15.20

Del.quantity cm³/ : 24.4...24.6

100 s: (24.1...24.9)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.8...5.2

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 550

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 244.0...246.0

1000 : (241.0...249.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 20.0

Testing:

1st rack travel in: 14.10

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.0

Testing:
Speed rpm : 200
Minimum rack trave: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL
Dimension a mm : ?
Torque control curve -- 1st version
1st speed rpm : 1000
Rack travel in m: 15.10...15.20
2nd speed rpm : 700
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 15.10...15.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.80...12.00
2nd pressure hPa : 110
Rack travel in m: 12.10...12.20
3rd pressure hPa : 470
Rack travel in m: 13.80...14.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1000
Del.quantity cm3/ : 241.0...247.0
1000 s: (238.0...250.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 14.10
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 220.0...240.0
1000 s: (216.0...244.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 3-7228

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 k
 Edition : 21.08.92
 Replaces : 05.92
 Test oil : ISO-4113

Combination no. : 0 402 046 340

Injection pump
 Pump designation : PES6P120A320RS525
 EP type number : 0 412 026 058
 Governor
 Governor design. : RQV300...1050PA955
 Governor no. : 0 421 813 856

Customer-spec. information
 Customer : RVI

Engine : MIDSO62045J

1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 9.40...9.50

Del.quantity cm³/

100 s: (13.5...14.3)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 5.7...6.1

Del.quantity cm³/

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 1050
travel mm		: 8.00...8.20
2nd speed	rpm	: 275
travel mm		: 0.80...1.20
3rd speed	rpm	: 430
travel mm		: 3.40...4.00
4th speed	rpm	: 1400
travel mm		: 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position		
Degree:	-1	
Speed	rpm	: 1240
Rack travel in mm		: 8.10...10.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version		
Speed	rpm	: 1050
Del.quantity		: 138.0...140.0
1000		: (135.0...143.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 298...306

Testing:

1st rack travel in: 8.40
Speed rpm : 1115...1125
2nd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 244...252
Speed rpm : 275
Rack travel in mm : 5.80...6.00

CONSTANT REGULATION

Speed rpm : 310...430

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm³/ : 126.0...134.0
 1000 s: (123.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.40
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
 1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.70...6.10
Del.quantity cm³/ : 17.0...23.0
 1000 s: (14.0...26.0)

Spread cm³ : 8.00
 1000 s: (12.00)

Remarks:

;
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governer no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 168.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 14.00...14.10

Del.quantity cm³/ : 15.9...16.1

100 s: (15.6...16.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 159.0...161.0

1000 : (156.5...163.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.00

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 161.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 14.00...14.10

Del.quantity cm³/ : 15.9...16.1

100 s: (15.6...16.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 159.0...161.0

1000 : (156.5...163.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.00

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AC

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information

Customer : KHD
 Engine : BF6L513RC

1st version kW : 146.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 14.9...15.1

100 s: (14.6...15.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 149.0...151.0

1000 : (146.5...153.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.50

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AD

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 142.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 039

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.30...13.40

Del.quantity cm³/ : 14.4...14.6

100 s: (14.1...14.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 144.0...146.0

1000 : (141.5...148.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.30

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AE

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governer no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 154.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/ : 14.7...14.9

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AF
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governer no. : 0 421 801 278
 Customer-spec. information
 Customer : KHD
 Engine : BF6L513R
 1st version kW : 147.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/ : 14.7...14.9

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 850

Rack travel in m: 13.40...13.50

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AG

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governer no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 140.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AH

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 130.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

M01

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.70...12.80

Del.quantity cm³/

100 s: (12.6...13.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 129.0...131.0

1000 : (126.5...133.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.70

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 759AI

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governer no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 123.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del.quantity cm³/ : 12.3...12.5

100 s: (12.0...12.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 123.0...125.0

1000 : (120.5...127.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.50

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information

Customer : KHD
 Engine : BF6L513R

1st version kW : 167.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.00...13.10

Del.quantity cm³/ : 14.2...14.4

100 s: (13.9...14.6)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 390

travel mm : 2.40...2.70

3rd speed rpm : 460

travel mm : 2.80...3.20

4th speed rpm : 1190

travel mm : 8.40...8.50

5th speed rpm : 1290

travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del.quantity : 142.0...144.0

1000 : (139.5...146.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.00

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1280...1310

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack trave: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.00...13.10

2nd speed rpm : 600

Rack travel in m: 13.00...13.20

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 1000

Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 430

Rack travel in m: 12.90...13.00

3rd pressure hPa : 400

Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 390

travel mm : 2.40...2.70

3rd speed rpm : 460

travel mm : 2.80...3.20

4th speed rpm : 1190

travel mm : 8.40...8.50

5th speed rpm : 1290

travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.70

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.70...12.80

2nd speed rpm : 600

Rack travel in m: 12.70...12.90

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AC

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 150.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.40...12.50

Del.quantity cm³/ : 13.0...13.2

100 s: (12.7...13.4)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 390

travel mm : 2.40...2.70

3rd speed rpm : 460

travel mm : 2.80...3.20

4th speed rpm : 1190

travel mm : 8.40...8.50

5th speed rpm : 1290

travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 130.0...132.0

1000 : (127.5...134.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.40

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.40...12.50

2nd speed rpm : 600

Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AD

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information

Customer : KHD

Engine : BF6L513R

1st version kW : 147.0
 Rated speed : -

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 12.7...12.9

100 s: (12.4...13.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.30...1.40
2nd speed	rpm	: 390
	travel mm	: 2.40...2.70
3rd speed	rpm	: 460
	travel mm	: 2.80...3.20
4th speed	rpm	: 1190
	travel mm	: 8.40...8.50
5th speed	rpm	: 1290
	travel mm	: 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1150
Del.quantity	1000	: 127.0...129.0
	1000	: (124.5...131.5)
Spread	cm3	: 4.00
	1000	: (7.50)

RATED SPEED

1st version

Control Lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.30

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1265...1295

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control Lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.30...12.40

2nd speed rpm : 600

Rack travel in m: 12.30...12.50

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AE

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm³/ : 12.2...12.4

100 s: (11.9...12.6)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 390

travel mm : 2.40...2.70

3rd speed rpm : 460

travel mm : 2.80...3.20

4th speed rpm : 1190

travel mm : 6.40...8.50

5th speed rpm : 1290

travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 122.0...124.0

1000 : (119.5...126.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.10
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100
Minimum rack trave: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150
Rack travel in m: 12.10...12.20
2nd speed rpm : 600
Rack travel in m: 12.10...12.30

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AF

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 138.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - " : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.00...12.10

Del.quantity cm³/

100 s: (11.7...12.4)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 390
 travel mm : 2.40...2.70

3rd speed rpm : 460
 travel mm : 2.80...3.20

4th speed rpm : 1190
 travel mm : 8.40...8.50

5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
 Del.quantity : 120.0...122.0

1000 : (117.5...124.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.00
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1250...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100
Minimum rack trave: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150
Rack travel in m: 12.00...12.10
2nd speed rpm : 600
Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AG

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information

Customer : KHD
 Engine : BF6L513R

1st version kW : 134.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 11.6...11.8

100 s: (11.3...12.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 390

travel mm : 2.40...2.70

3rd speed rpm : 460

travel mm : 2.80...3.20

4th speed rpm : 1190

travel mm : 8.40...8.50

5th speed rpm : 1290

travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 116.0...118.0

1000 : (113.5...120.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 10.80

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1255...1285

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 11.80...11.90

2nd speed rpm : 600

Rack travel in m: 11.80...12.00

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AH

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governer no. : 0 421 813 598

Customer-spec. information

Customer : KHD

Engine : BF6L513R

1st version kW : 170.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.10...13.20

Del.quantity cm³ : 14.4...14.6

100 s: (14.1...14.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 390
 travel mm : 2.40...2.70

3rd speed rpm : 460
 travel mm : 2.80...3.20

4th speed rpm : 1190
 travel mm : 8.40...8.50

5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1100

Del.quantity : 144.0...146.0
 1000 : (141.5...148.5)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.10

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1280...1310

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 83...91

Testing:

Speed rpm : 100

Minimum rack trave: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.10...13.20

2nd speed rpm : 600

Rack travel in m: 13.10...13.30

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 1100

Rack travel mm : 13.10...13.20

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 430

Rack travel in m: 12.90...13.00

3rd pressure hPa : 370

Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ 1000 s: 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ 1000 s: 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 787AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV375...1000PA862
 Governor no. : 0 421 813 625

Customer-spec. information

Customer : KHD

Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 12.9...13.1

100 s: (12.6...13.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 375.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 375
	travel mm	: 0.90...1.10
2nd speed	rpm	: 410
	travel mm	: 1.60...1.90
3rd speed	rpm	: 550
	travel mm	: 2.80...3.10
4th speed	rpm	: 1050
	travel mm	: 8.50...8.60
5th speed	rpm	: 1110
	travel mm	: 9.50...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1000
Del.quantity	1000	: 129.0...131.0
		: (126.5...133.5)
Spread	cm ³	: 4.00
	1000	: (7.50)

RATED SPEED	Del.quantity cm ³ / : 170.0...200.0 1000 s: (166.0...204.0)
1st version	
Control lever	
position degrees: 117...125	
Testing:	Remarks:
1st rack travel in: 11.70	:
Speed rpm : 1040...1050	
2nd rack travel in: 5.50	
Speed rpm : 1075...1105	
4th rack travel in: 1250	
Speed rpm : 0.00...1.00	
LOW IDLE 1	
Control lever	
position degrees: ?	
Testing:	
Speed rpm : 100	
Minimum rack trave: 7.50	
Speed rpm : 375	
Rack travel in mm : 5.90...6.10	
CONSTANT REGULATION	
Speed rpm : 375...480	
TORQUE CONTROL	
Dimension a mm : 0.20	
Torque control curve - 1st version	
1st speed rpm : 1000	
Rack travel in m: 12.70...12.80	
2nd speed rpm : 650	
Rack travel in m: 12.90...13.00	
START CUT-OUT	
Speed 1/min : 310 (330)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Speed rpm : 650	
Del.quantity cm ³ / : 136.0...140.0	
1000 s: (133.0...143.0)	
BREAKAWAY	
1st version	
1mm rack travel less than	
full load rack tr: 11.70	
Speed rpm : 1040...1050	
STARTING FUEL DELIVERY	
Speed rpm : 100	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 787AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV375...1000PA862
 Governer no. : 0 421 813 625

Customer-spec. information

Customer : KHD
 Engine : BF6L513R

1st version kW : 135.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.40...12.50

Del.quantity cm³/

100 s: 12.1...12.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 375.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 375
 travel mm : 0.90...1.10

2nd speed rpm : 410
 travel mm : 1.60...1.90

3rd speed rpm : 550
 travel mm : 2.80...3.10

4th speed rpm : 1050
 travel mm : 8.50...8.60

5th speed rpm : 1110
 travel mm : 9.50...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000
 Del.quantity : 124.0...126.0

1000 : (121.5...128.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED	Del.quantity cm ³ / : 170.0...200.0 1000 s: (166.0...204.0)
1st version	
Control lever	
position degrees: 117...125	
Testing:	
1st rack travel in: 11.40	
Speed rpm : 1040...1050	
2nd rack travel in: 5.50	
Speed rpm : 1070...1100	
4th rack travel in: 1250	
Speed rpm : 0.00...1.00	
LOW IDLE 1	
Control lever	
position degrees: ?	
Testing:	
Speed rpm : 100	
Minimum rack trave: 7.50	
Speed rpm : 375	
Rack travel in mm : 5.90...6.10	
CONSTANT REGULATION	
Speed rpm : 375...480	
TORQUE CONTROL	
Dimension a mm : 0.20	
Torque control curve - 1st version	
1st speed rpm : 1000	
Rack travel in m: 12.40...12.50	
2nd speed rpm : 650	
Rack travel in m: 12.60...12.70	
START CUT-OUT	
Speed 1/min : 310 (330)	
FUEL DELIVERY CHARACTERISTICS	
1st version	
Speed rpm : 650	
Del.quantity cm ³ / : 131.0...135.0	
1000 s: (128.0...138.0)	
BREAKAWAY	
1st version	
1mm rack travel less than	
full load rack tr: 11.40	
Speed rpm : 1040...1050	
STARTING FUEL DELIVERY	
Speed rpm : 100	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 794AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA862-1
 Governor no. : 0 421 813 684

Customer-spec. information

Customer : KHD
 Engine : BF6L513RC

1st version kW : 180.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 13.70...13.80

Del.quantity cm³/

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.50

2nd speed rpm : 450

travel mm : 2.60...3.20

3rd speed rpm : 700

travel mm : 4.80...5.40

4th speed rpm : 1110

travel mm : 7.90...8.10

5th speed rpm : 1230

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 115...123

Testing:

1st rack travel in: 12.70

Speed rpm : 1110...1120

2nd rack travel in: 5.50

Speed rpm : 1195...1225

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack trave: 9.10

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...480

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 13.70...13.80

2nd speed rpm : 600

Rack travel in m: 13.70...13.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.70

Speed rpm : 1110...1120

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governer no. : 0 421 813 708

Customer-spec. information

Customer : KHD
 Engine : BF6L413FR/513R

1st version kW : 158.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 13.20...13.30

Del.quantity cm³/ : 13.9...14.1

100 s: (13.6...14.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.1

100 s: (1.4...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 400

travel mm : 2.70...3.30

3rd speed rpm : 600

travel mm : 4.20...4.80

4th speed rpm : 1120

travel mm : 8.40...8.60

5th speed rpm : 1245

travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Aneroid pressure h: 1010

Del.quantity : 139.0...141.0

1000 : (136.5...143.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.20

Speed rpm : 1115...1125

2nd rack travel in: 5.50

Speed rpm : 1210...1240

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 85...93

Testing:

Speed rpm : 100

Minimum rack travel: 2.60

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 13.20...13.30

2nd speed rpm : 600

Rack travel in m: 13.20...13.40

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 1010

Rack travel mm : 13.20...13.30

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 400

Rack travel in m: 13.00...13.10

3rd pressure hPa : 340

Rack travel in m: 12.60...12.70

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.20

Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governer no. : 0 421 813 708

Customer-spec. information
 Customer : KHD
 Engine : BF6L413FR/513R

1st version kW : 150.0
Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 13.3...13.5

100 s: (13.0...13.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.1

100 s: (1.4...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.40

2nd speed rpm : 400

travel mm : 2.70...3.30

3rd speed rpm : 600

travel mm : 4.20...4.80

4th speed rpm : 1120

travel mm : 8.40...8.60

5th speed rpm : 1245

travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Aneroid pressure h: 920

Del.quantity : 133.0...135.0

1000 : (130.5...137.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 11.90

Speed rpm : 1115...1125

2nd rack travel in: 5.50

Speed rpm : 1205...1235

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 85...93

Testing:

Speed rpm : 100

Minimum rack trave: 9.60

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 12.90...13.00

2nd speed rpm : 600

Rack travel in m: 12.90...13.10

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 920

Rack travel mm : 12.90...13.00

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 370

Rack travel in m: 12.80...12.90

3rd pressure hPa : 320

Rack travel in m: 12.50...12.60

START CUT-OUT

Speed 1/min : 240 (260)

NO2

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AC

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governer no. : 0 421 813 708

Customer-spec. information

Customer : KHD
 Engine : BF6L413FR/513R

1st version kW : 142.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values —

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N03

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 12.60...12.70

Del.quantity cm³/ : 12.8...13.0

100 s: (12.5...13.2)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.1

100 s: (1.4...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 400
 travel mm : 2.70...3.30

3rd speed rpm : 600
 travel mm : 4.20...4.80

4th speed rpm : 1120
 travel mm : 8.40...8.60

5th speed rpm : 1245
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075
 Aneroid pressure h: 880
 Del.quantity : 128.0...130.0
 1000 : (125.5...132.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 11.60
Speed rpm : 1115...1125
2nd rack travel in: 5.50
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 85...93

Testing:

Speed rpm : 100
Minimum rack trave: 9.60
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 12.60...12.70
2nd speed rpm : 600
Rack travel in m: 12.60...12.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 450
Pressure hPa : 880
Rack travel mm : 12.60...12.70

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50
2nd pressure hPa : 370
Rack travel in m: 12.80...12.90
3rd pressure hPa : 320
Rack travel in m: 12.50...12.60

START CUT-OUT

Speed 1/min : 240 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ 1000 s: 123.0...125.0
(120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ 1000 s: 170.0...200.0
(166.0...204.0)

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AA
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718
 Customer-spec. information
 Customer : KHD
 Engine : BF6L513RC
 1st version kW : 200.0
 Rated speed : 2300
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600
(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.90...14.10

Del.quantity cm³/ : 16.2...16.4

100 s: (15.9...16.6)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.40

2nd speed rpm : 350

travel mm : 1.90...2.50

3rd speed rpm : 650

travel mm : 4.20...4.80

4th speed rpm : 1195

travel mm : 8.40...8.60

5th speed rpm : 1320

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del.quantity : 162.0...164.0

1000 : (159.5...166.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 12.90
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100
Minimum rack trave: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.90...14.00
2nd speed rpm : 700
Rack travel in m: 14.10...14.20
3rd speed rpm : 1000
Rack travel in m: 13.90...14.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 450
Pressure hPa : 1000
Rack travel mm : 13.90...14.10

Measurement

Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 480
Rack travel in m: 13.60...13.70
3rd pressure hPa : 370
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 166.0...170.0
1000 s: (163.0...173.0)

Aneroid pressure h: -

Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 801AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governer no. : 0 421 813 718

Customer-spec. information

Customer : KHD
 Engine : BF6L513RC

1st version kW : 199.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.90...14.00

Del.quantity cm3/ : 16.1...16.3

100 s: (15.8...16.5)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 650
 travel mm : 4.20...4.80

4th speed rpm : 1195
 travel mm : 8.40...8.60

5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del.quantity : 161.0...163.0
 1000 : (158.5...165.5)

Spread cm3 : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 12.90

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack trave: 9.30

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.90...14.00

2nd speed rpm : 700

Rack travel in m: 14.10...14.20

3rd speed rpm : 1000

Rack travel in m: 13.90...14.10

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 1000

Rack travel mm : 13.90...14.00

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 480

Rack travel in m: 13.60...13.70

3rd pressure hPa : 370

Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 700

Del.quantity cm³/ : 165.0...169.0

1000 s: (162.0...172.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.90

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AC

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governer no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 15.3...15.5

100 s: (15.0...15.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 1.20...1.40
2nd speed	rpm	: 350
	travel mm	: 1.90...2.50
3rd speed	rpm	: 650
	travel mm	: 4.20...4.80
4th speed	rpm	: 1195
	travel mm	: 8.40...8.60
5th speed	rpm	: 1320
	travel mm	: 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 960

Del.quantity : 153.0...155.0

1000 : (150.5...157.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 12.50

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack trave: 9.30

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.50...13.60

2nd speed rpm : 700

Rack travel in m: 13.70...13.80

3rd speed rpm : 1000

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 960

Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 420

Rack travel in m: 13.20...13.30

3rd pressure hPa : 330

Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600

Speed rpm : 700

Del.quantity cm³/ : 158.0...162.0

1000 s: (155.0...165.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 801AD

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governer no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 180.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.20...13.30

Del.quantity cm³/ : 14.9...15.1

100 s: (14.6...15.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 650
 travel mm : 4.20...4.80

4th speed rpm : 1195
 travel mm : 8.40...8.60

5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 910

Del.quantity : 149.0...151.0
 1000 : (146.5...153.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 12.20

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack trave: 9.30

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.20...13.30

2nd speed rpm : 700

Rack travel in m: 13.40...13.50

3rd speed rpm : 1000

Rack travel in m: 13.20...13.40

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 910

Rack travel mm : 13.20...13.30

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 400

Rack travel in m: 13.10...13.20

3rd pressure hPa : 330

Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 540

Speed rpm : 790

Del.quantity cm³/ : 154.0...158.0

1000 s: (151.0...161.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.20

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (165.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AE

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governer no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 170.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 14.2...14.4

100 s: (13.9...14.6)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 650
 travel mm : 4.20...4.80

4th speed rpm : 1195
 travel mm : 8.40...8.60

5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 850

Del.quantity : 142.0...144.0
 1000 : (139.5...146.5)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 11.90

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1260...1290

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack trave: 9.30

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.90...13.00

2nd speed rpm : 700

Rack travel in m: 13.10...13.20

3rd speed rpm : 1000

Rack travel in m: 12.90...13.10

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 850

Rack travel mm : 12.90...13.00

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 375

Rack travel in m: 12.90...13.00

3rd pressure hPa : 330

Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 520

Speed rpm : 700

Del.quantity cm³/ : 147.0...151.0

1000 s: (144.0...154.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 801AF

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governer no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 165.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.70...12.80

Del.quantity cm³/

100 s: (13.6...14.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.40

2nd speed rpm : 350

travel mm : 1.90...2.50

3rd speed rpm : 650

travel mm : 4.20...4.80

4th speed rpm : 1195

travel mm : 8.40...8.60

5th speed rpm : 1320

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 835

Del.quantity : 139.0...141.0

1000 : (136.5...143.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 11.70
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1255...1285
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100
Minimum rack trave: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.70...12.80
2nd speed rpm : 700
Rack travel in m: 12.90...13.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 450
Pressure hPa : 835
Rack travel mm : 12.70...12.80

Measurement

Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 345
Rack travel in m: 12.60...12.70
3rd pressure hPa : 330
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 440
Speed rpm : 700
Del.quantity cm³/1000 s: 144.0...148.0
1000 s: (141.0...151.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/1000 s: 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/1000 s: 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 805AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-3
 Governer no. : 0 421 813 743

Customer-spec. information

Customer : KrD
 Engine : BF6L413FRC/513RC

1st version kW : 188.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 15.3...15.5

100 s: (15.0...15.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40

2nd speed rpm : 450
 travel mm : 2.60...3.20

3rd speed rpm : 650
 travel mm : 4.70...5.30

4th speed rpm : 1110
 travel mm : 8.20...8.40

5th speed rpm : 1250
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Aneroid pressure h: 960

Del.quantity : 153.0...155.0

1000 : (150.5...157.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.50

Speed rpm : 1105...1115

2nd rack travel in: 5.50

Speed rpm : 1200...1230

4th rack travel in: 14.00

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 84...92

Testing:

Speed rpm : 100

Minimum rack trave: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 13.50...13.60

2nd speed rpm : 700

Rack travel in m: 13.70...13.80

3rd speed rpm : 900

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 960

Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 455

Rack travel in m: 13.40...13.50

3rd pressure hPa : 360

Rack travel in m: 12.60...12.80

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 670

Speed rpm : 700

Del.quantity cm³/ 1000 s: 158.0...162.0
1000 s: (155.0...165.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ 1000 s: 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ 1000 s: 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 805AB
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-3
 Governer no. : 0 421 813 743
 Customer-spec. information
 Customer : KHD
 Engine : BF6L413FRC/513RC
 1st version kW : 180.0
 Rated speed : 2050
TEST BENCH REQUIREMENTS
 Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter x Wall thickness x Length mm : 6.00X1.50X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 14.7...14.9

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.40

2nd speed rpm : 450

travel mm : 2.60...3.20

3rd speed rpm : 650

travel mm : 4.70...5.30

4th speed rpm : 1110

travel mm : 8.20...8.40

5th speed rpm : 1250

travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Aneroid pressure h: 900

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.10

Speed rpm : 1105...1115

2nd rack travel in: 5.50

Speed rpm : 1195...1225

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 84...92

Testing:

Speed rpm : 100

Minimum rack trave: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : 0.10

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 13.10...13.20

2nd speed rpm : 700

Rack travel in m: 13.20...13.30

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 900

Rack travel mm : 13.10...13.20

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 410

Rack travel in m: 12.90...13.10

3rd pressure hPa : 340

Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600

Speed rpm : 700

Del.quantity cm³/ : 147.0...151.0

1000 s: (144.0...154.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10

Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

RATED SPEED

1st version:

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 11.90

Speed rpm : 1105...1115

2nd rack travel in: 5.50

Speed rpm : 1190...1220

4th rack travel in: 14.00

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 84...92

Testing:

Speed rpm : 100

Minimum rack trave: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 12.90...13.00

2nd speed rpm : 700

Rack travel in m: 12.90...13.00

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 850

Rack travel mm : 12.90...13.00

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 360

Rack travel in m: 12.70...12.80

3rd pressure hPa : 340

Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 490

Speed rpm : 700

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ 1000 s: 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ 1000 s: 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

 Combination no. : 0 402 046 806AA

 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-4
 Governer no. : 0 421 813 745

 Customer-spec. information
 Customer : KHD

 Engine : BF6L513RC

 1st version kW : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

 Overflow valve : 1 417 413 025

 Inlet press., bar : 1.50

 Test nozzle holder assembly : 0 681 343 009

 Opening pressure, bar : 172...175

 Test lines : 1 680 750 015

 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 15.3...15.5

100 s: (15.0...15.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40

2nd speed rpm : 450

travel mm : 2.60...3.20

3rd speed rpm : 650

travel mm : 3.30...3.90

4th speed rpm : 1195

travel mm : 8.30...8.50

5th speed rpm : 1330

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 960

Del.quantity : 153.0...155.0

1000 : (150.5...157.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.50

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 84...92

Testing:

Speed rpm : 100

Minimum rack trave: 9.00

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...550

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.50...13.60

2nd speed rpm : 700

Rack travel in m: 13.70...13.80

3rd speed rpm : 1000

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 960

Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 400

Rack travel in m: 13.10...13.20

3rd pressure hPa : 330

Rack travel in m: 12.50...12.70

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600

Speed rpm : 700

Del.quantity cm³/ 1000 s: 158.0...152.0

(155.0...165.0)

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ 1000 s: 123.0...125.0

(120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ 1000 s: 170.0...200.0

(166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH J. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 817AA

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-5
 Governer no. : 0 421 813 871

Customer-spec. information

Customer : KHD

Engine : BF6L513R

1st version kW : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 13.6...13.8

100 s: (13.3...14.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 2.10...2.50

2nd speed rpm : 450
 travel mm : 3.40...4.00

3rd speed rpm : 700
 travel mm : 5.10...5.70

4th speed rpm : 1190
 travel mm : 8.90...9.10

5th speed rpm : 1300
 travel mm : 10.00...10.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1160

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
 Del.quantity : 136.0...138.0

1000 : (133.5...140.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 119...127

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.70

Speed rpm : 1190...1200

2nd rack travel in: 5.50

Speed rpm : 1270...1300

4th rack travel in: 1400

Speed rpm : 0.00...1.00

APPLICATION

Combine-harvester

LOW IDLE 1

Control lever

position degrees: 89...97

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...520

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.70...12.80

2nd speed rpm : 600

Rack travel in m: 12.70...12.90

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 817AB

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-5
 Governer no. : 0 421 813 871

Customer-spec. information

Customer : KHD
 Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-30-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.00...12.10

Del.quantity cm³/ : 12.3...12.5

100 s: (12.0...12.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
	travel mm	: 2.10...2.50
2nd speed	rpm	: 450
	travel mm	: 3.40...4.00
3rd speed	rpm	: 700
	travel mm	: 5.10...5.70
4th speed	rpm	: 1190
	travel mm	: 8.90...9.10
5th speed	rpm	: 1300
	travel mm	: 10.00...10.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1160

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed	rpm	: 1150
Del.quantity	1000	: 123.0...125.0
		: (120.5...127.5)
Spread	cm ³	: 4.00
	1000	: (7.50)

RATED SPEED

1st version

Control lever

position degrees: 119...127

On activation of the starting solenoid,
the start position must be reached.

Testing:

1st rack travel in: 11.00
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

APPLICATION

Combine-harvester

LOW IDLE 1

Control lever

position degrees: 89...97

Testing:

Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...520

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1150
Rack travel in m: 12.00...12.10
2nd speed rpm : 600
Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.